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Observations on the Power of the Arteries in carrying on the Circulation of the Blood, on the Nature of this Power, and on the Manner of its Exertion. By WILLIAM SHEARMAN, M. D. Member of the Royal College of Physicians, and Physician to the London Dispensary.

(From the London Medical Repository for September, 1823.)

THE doctrine of the circulation of the blood being one of the most important in physiology, it becomes desirable that our notions of the powers producing and regulating the course of that fluid through every part of the body should be correct and well founded. It has long been taught that the circulation of the blood depends upon the contraction of the heart, as the *primum mobile* or centre of action, assisted by that of the arteries, the structure of which vessels is in some degree muscular, adapting them to this office. The principles upon which this theory was established have long been acquiesced in, and, indeed, they appear to be supported by demonstrable proof, the nature and extent of which are too well known to require repetition here. But we are now called upon by physiologists of no little authority and reputation to discard our antiquated notions, and to adopt opinions repugnant to all our former conclusions, derived, as had been supposed, from actual observation and reasonings grounded upon evident facts; and this on penalty of a stigma not a little appalling.* It is not my inten-

* "It is hardly credible that any man can continue to support the old doctrine, who is at all open to the conviction of truth."—*Medical and Chirurgical Review.*

tion to enter into a critical examination of the new doctrines proposed to us, with a view either to support or refute their pretensions; but I hold it to be reasonable, that previously to surrendering our former opinions, we should be allowed to express such doubts as may occur to us, touching the validity of the conclusions deduced from the reasonings and experiments of these distinguished philosophers.

It is not possible, within the compass of a single paper, to advert to every point embraced in the various publications on the physiology of the circulation; I shall, therefore, confine myself to a consideration of the share of power in carrying on the circulation (if any) possessed by the arteries, and the nature of this power, with the manner of its exertion.

The publications on this subject which have chiefly attracted my notice, are those of Dr. Lucas on the Principles of Inflammation and Fever, and of Dr. Parry on the Nature, Cause, and Variety of the Arterial Pulse, &c.; and it is remarkable that these two authors are at direct variance on one very material point—the power of the arteries in promoting the circulation; the former attributing the propulsion of the blood to the action of these vessels, the latter denying them any share whatever in this effect. Dr. Lucas's opinion being in unison with that most usually hitherto entertained, although probably incorrect as to the nature of the action of the vessels, to which subject I shall hereafter revert, it is only necessary to consider the proofs and arguments in favour of the passive state of the arteries during the flow of blood through them.

Various experiments were made by Dr. Parry to confirm his opinion, that arteries suffered no dilatation nor contraction during the systole or diastole of the heart. We might object *in limine* to all conclusions deduced from experiments made under circumstances different from the natural and ordinary state of the animal operated on, as all vivisections must unavoidably in some measure be; but granting that no visible pulsation appears in a denuded artery, it is certain that a pulsation may be felt on applying the finger over an artery in its natural state; and how is this to be explained?

"The blood in every part of the arterial system may be considered as a set of continuous columns, possessing little compressibility, and filling the tubes in which they are contained. When, by the contraction of the left ventricle, the blood included in it is forcibly expelled into the aorta, all these columns receive the shock of propulsion at the same instant. But the velocity during this systole being greater than during the diastole, the momentum, and consequently the impulse, in every direction, is also greatest in the systole. When, therefore, an artery is compressed with the fingers, in

the usual mode of feeling the pulse, the blood, in consequence of the systole rushing into the artery with an increase of momentum, gives a stronger impulse of dilatation to the fingers, than from the less momentum which exists during the diastole, and thus produces the phenomenon of the pulse."—*Parry.*

On the other hand, I would contend, that the pulsation is occasioned by an actual contraction of the vessel, restoring it to its former diameter previous to the reception of the additional quantity of blood thrown into the arteries during the systole of the heart.

In proof of the former opinion, there appears to be nothing but the naked experiment, demonstrating that, under the circumstances of the experiment, no pulsation is visible. It seems to be admitted by every one that there must be some, however small, distention of the vessels during the systole of the heart; consequently, there must be subsequent contraction to a corresponding degree, at least; and the question seems to be, whether this contraction is at all appreciable by the senses? It is well known that many phenomena may be detected by one sense, which are not cognizable by another; and it does not necessarily follow, that because contraction of the vessel is not visible, it may not be felt by the fingers. If it be admitted that any contraction at all takes place in the artery to restore it to the diameter it possessed during the diastole of the heart, there is no limiting the force of that contraction; it may not only be sufficient merely to gradually restore the former diameter, but actually to contract forcibly upon the blood, and thus assist in propulsion; and this is the point at issue.

No one denies the contractile power of the arteries, which would seem to have been bestowed upon them in vain, if no action or exertion of it was requisite in the business of circulation, if the whole propelling power resided in the heart alone; but some experiments of Dr. Parry himself show, that the larger arteries "continuing to contract by their tonic and elastic properties after the heart has ceased to supply them with blood, necessarily propel all, or nearly all the blood they contain, through the capillaries into the veins." If the power of the arteries be sufficient to propel the blood forward, independent of the heart's action, in some circumstances, is it unreasonable to expect that they also *constantly* contribute some assistance to the propulsion of the blood, and to suppose that the pulsation is the measure of this assistance?

One proof adduced in favour of the doctrine above mentioned, is stated, by the able reviewer in the Medico-Chirurgical Review, to be, "that the systole of the ventricle and the pulsation of the arteries are precisely simultaneous in every

part of the system, and wherever we apply our finger, that the pulsations are perfectly *synchronous* from the root of the aorta to the minutest plantar twig." If this proof should not be founded in fact, if it shall appear that different arteries do sometimes pulsate variously and differently from the contraction of the heart, an original power of contraction cannot be denied them; and possessing this, there can be no reason why it should not constantly be called into action, as a part of the circulating force, auxiliary to that of the heart, the primum mobile.

That there are cases, and those very frequent, when the pulsation of some of the arteries, at least, is not synchronous with that of the heart, or even of other arteries, is evinced in various inflammations. I shall, on this subject, quote the words of an able author. "In a state of inflammation, the pulse of the inflamed part, in consequence of local excitement, is much more frequent than that of the heart or any other organ. Thus in a whitlow, the radial artery may give to the finger a hundred pulsations in a minute, while not more than seventy strokes may be exhibited in any other part of the system. The rapidity of the pulse is, in this case, usually in proportion to the degree of the inflammatory action; and hence, if the system should labour at the same time under ten different inflammations in different parts, or organs of a different structure, as glands, muscles, and membranes, it is possible that it may have so many different seats of pulsation taking place at such different parts at one and the same time, while all of them are at variance with the pulsation of the heart."* Here it is evident the pulsation is not occasioned by the systole of the heart, but by the contraction of the vessels themselves; and if in this case, why not in every case whenever pulsation is felt?

Another proof adduced against the appreciable contraction and dilatation of the arteries, is the small quantity of blood thrown out of the ventricle at each systole, not exceeding twelve drams; indeed, "the whole arterial system does not contain during the systole, an overplus of twelve drams, but only of about eight drams." "We would be glad to ask," says the able reviewer before quoted, "those physiologists who argue for alternative dilatation and contraction of the arteries, corresponding with the pulse, what perceptible or tangible increase of diameter in the vessels of the *whole arterial system* can be expected from such a quantity? The fallacy of this reasoning consists in assuming, that the contraction and dilatation of the vessels must be proportioned to the force or momentum of the exciting cause; were the contraction of the vessel performed by a mechanical power, this would be true, for action

* Good's Study of Medicine, Vol. II. p. 16.

and reaction must be equal; but here the contraction is the result of *vital* action, in which no certain proportion obtains between the amount of action and its exciting force. The functions of the heart and arteries are similar; the forcible contraction of the ventricle is not the result of the mechanical distention of that cavity by the blood poured into it, but a vital action to which the ventricle is roused by the stimulus of that fluid; the same thing is true of the arterial system; the stimulus of distention, even of the minutest quantity, produces action, exceeding in amount that which would be caused by a very considerable external force; the ordinary laws of mechanics and hydraulics have no place here.

Were the heart the sole propelling power, the arteries being passive or nearly passive tubes; were there, in fact, no contraction of these vessels, no pulsation of them but what was created by external pressure interrupting the flow of blood through them; what information could we derive from applying our fingers to the arterial tube, beyond that which may be obtained by applying them over the heart itself? the frequency of the contraction of the heart, or, perhaps, the force with which the blood is propelled? This last point, however, must be subject to much fallacy in feeling the pulse; the degree of momentum imparted to the finger must be proportioned to the pressure applied, and the consequent diminution of the arterial cavity. But there are certain indications obtained by feeling the pulse, which cannot be derived from the most accurate attention to the action of the heart alone, and which, therefore, seem to depend upon the state or action of the vessels themselves. I shall only instance the *hard* pulse and the *redoubling* or hæmorrhagic pulse, neither of which can I reconcile with the new theory.

I do not think the hard or contracted pulse depends upon the momentum of blood in the vessel, from the quick and strong contraction of the left ventricle (see Parry, p. 148); for this state of pulse, indicating, I should say, strong action in the vessel itself, will frequently exist when the force of action of the heart is very much diminished. Nor does the explanation of a double stroke of one particular artery, offered by Dr. Parry, p. 134 of his work, appear to be applicable to that general state of the arterial pulse expressed by the term *redoubling*, in which the force of action in the arteries exceeds the degree which usually obtains in health.

I might cite, as additional difficulties to the belief of the new doctrine, the frequent visible pulsation of the radial artery under the integuments, even when the muscles and integuments themselves are in the utmost state of relaxation, exerting no evident pressure; and the facility with which pulsation

may always be felt with the slightest pressure of a single finger, quite insufficient apparently to diminish the diameter of the vessel the 100th part of an inch.

It appears to me that both Dr. Parry and Dr. Lucas are incorrect in ascribing the *contraction* of the arteries to elasticity; I believe, on the contrary, it will be found that their contraction is performed by a power *opposed* to and constantly *counteracting* elasticity.

"From various preceding considerations, it is natural, *à priori*, to conclude, that, when under the state not only of the usual healthy dilatation of arteries, but of that increased dilatation which often accompanies disease, the distending cause, which is a certain quantity or momentum of blood, is diminished, the elasticity will tend to contract them, so as within certain limits to accommodate them to the quantity of blood which they ought to convey."

The same idea of the contraction of the vessel being effected by elasticity, is expressed in the following sentence: "During health, the larger arteries of a living animal, as well under the diastole as systole of the left ventricle, are in a state of distention, to which they are forcibly impelled by their contained blood, against their mechanical power of elasticity."—P. 69.

"To bring the elastic principle into action, for the support of the circulation, with all the effect of which it is capable, it is necessary that the arteries should be in a state of forced distention, by which means a steady and permanent exertion of the elastic force will be kept up for the propulsion of the blood." "It must, indeed, be evident, that unless more or less of forced distention of the vessels were present, the elastic force could not be called into action at all for the propulsion of the current."—*Lucas*, pp. 22, 23.

Elasticity is not a vital property—it is inherent in the dead solid as well as in the living one; and the difference which exists in the diameter of a vessel during its life and after its death, can only be effected by the power of this principle. Whatever may be the diameter of any vessel during life, there is always an increase of it after death; and as this increase cannot be effected by any vital power, it must be occasioned by some property inherent in the dead solid, and the only power the latter possesses capable of producing this increase is elasticity.

It is stated by Dr. Lucas, and the experiments of Dr. Parry are appealed to in confirmation of the fact, that the diameter of the vessels is considerably reduced after death; this may be true at the instant of the death of the whole animal, but the life of the different parts continues for a longer or shorter period, after the death of the animal as a *whole*, and this reduced dia-

meter is effected by the *vital* property of the vessel endeavouring to contract upon its contents; some hours after death, when the vital properties of every part are extinct, the diameter of the vessels is always increased.

It is an important circumstance to ascertain whether, during life, the diameter of the arteries ever equals that point of dilatation to which elasticity brings them after death; for it is evident, that unless the diameter of the vessel exceeded the point at which elasticity would preserve it, this power can have no share in producing the contraction of the artery. I have been taught, and am still of opinion, that the arteries, at *their utmost distention* during life, are of less diameter than they are after death, when acted upon by elasticity alone. That in some of Dr. Parry's experiments, the diameter of the artery exceeded the point of elasticity, I am aware; but I am not satisfied that this increase is not to be attributed to some extraordinary and unusual distention arising out of the circumstances of the experiments; for in other experiments we find the distention did not equal the point of elasticity, as in Exper. 24, the left carotid, on exposure, measured $\frac{222}{400}$ of an inch, and the right $\frac{225}{400}$, whilst the elasticity of the latter was $\frac{232}{400}$; consequently any contraction during life could not have been effected by elasticity.

As tone or tonicity, however, is influenced in its degree by the relative strength or weakness of the system, it may happen that, in old age,* this principle may be so much weakened as no longer to be able sufficiently to counteract the elasticity, and to prevent the vessel from being distended by a much slighter impulse than would formerly have been adequate to the effect; but in young and strong animals, in which the tone is in a vigorous state, the diameter of the vessel never reaches that degree of dilatation to which the elasticity, if not counteracted, would extend them; and consequently, the elasticity can have no share in producing whatever contraction takes place in them.

The action of every mechanical power must be uniform; the force exerted by it must always be equal under similar circumstances; if the vessels were contracted by mechanical elasticity in accommodating themselves to their contents, the degree of contraction should be precisely equal under the loss of equal quantities of blood; but this is not the case: in Exp. 24, after the loss of the first ℥viij. the vessel contracted $\frac{38}{400}$ of an inch; after the second bleeding, it contracted only $\frac{15}{400}$; the diminution of the force counteracting elasticity was in each case precisely equal, viz. the abstraction of a volume of ℥viij. of blood,

* The horses in which the diameter of the vessels exceeded the point of elasticity appear to have been old ones.

and if the contraction was effected by mechanical elasticity, that also should have been equal; but the contraction of tonicity varies according to the relative degree of strength or weakness in the system, and is not by any means uniform, vital properties not being governed by mechanical laws.

The mode adopted by Dr. Parry in estimating the relative force of elasticity and tonicity, in producing contraction of the vessel, is by no means conclusive: elasticity, according to him, has a tendency and exerts an effort to contract the vessel, and tonicity has precisely the same tendency, and exerts a like effort in the same direction; but the tonicity is not exerted until the contraction has reached the point to which elasticity will bring it, which in Exp. 24 was $\frac{232}{406}$. It may be asked, was tonicity now first imparted to the vessel, or did the vessel possess it previously to its contraction to $\frac{232}{406}$? If it did possess tonicity previously, and the tendency of this power was to act in the *same direction* with elasticity, viz. to contract the vessels, what proof have we that both powers were not exerted at the same time? or how can we determine that if one of these powers only was exerted, the tonicity was quiescent and elasticity alone acted, rather than that the tonicity was acting and the elasticity quiescent?

If the tone and contractility of the vessels acquired by life, and the elasticity inherent in them, are employed conjointly to produce diminution of diameter, both acting in the same direction, one of these powers would seem to have been bestowed unnecessarily; if elasticity is sufficient to produce the requisite contraction, of what use is the tonicity? There appears to be some inconsistency in saying, that "if the elasticity should be inadequate to the requisite force or degree of contraction, the tonicity, or vital power, may assume the office of contraction *where it was left by the elasticity*, and carry it to the necessary extent." The elasticity would not become quiescent, it would now be counteracting the tonicity; and if the former power was able to bring the vessel to its mean point from a state of forced distention, why should it not also be able to bring it to the same mean point from a state of forced contraction?

The real fact appears to be, that the action of the heart and that of the arteries are precisely similar in performing the function of circulation. "The different compartments of the heart," says Dr. Parry, "are so far from expanding in consequence of the blood which is driven into them, that, *when altogether empty of blood, and even separated from the animal, they expand in a greater degree than when in their natural situation during life and healthy circulation.* Hence Mr. Hunter himself, notwithstanding the view which he gives of the action of the heart, acknowledges that this organ after death has a larger volume

than when the animal is living."* The same thing is true of the arteries; they have an increased diameter after death; during life they contract themselves upon the blood when it is thrown into them, and propel it forward, not by their elastic action, but by a vital contractility opposed to elasticity; having done this, they expand or are relaxed by the effect of the elastic principle, and again *easily* admit the ingress of more blood, which again causes them to contract, not by its *forcible* distention,† but by its natural stimulus, and in this way they are capable of applying an additional force to that of the heart, so as to promote the circulation through the whole body. This appears to me, at least, a more probable conjecture than that the blood is circulated by the repeated shocks of propulsion given to it as a solid column, by the forcible action of the ventricle.

Whilst I am of opinion that Dr. Parry did himself great credit by undertaking the experiments brought forward in his work, and am fully disposed to allow the experiments themselves all the weight they deserve, I still do not think them conclusive: and I must agree with the able reviewer before quoted, "that it is exceedingly difficult, if not impossible, to ascertain, by unequivocal experiments, the functions of the complicated machinery employed in the circulation of the blood. We must, therefore, trust partly to reasoning and reflection, and partly to observation."

Northampton Square, July 19, 1823.

Cursory Remarks on Small-Pox, as it occurs Subsequent to Vaccination. By GEORGE GREGORY, M. D., Physician to the Hospital for Small-Pox and Vaccination, at St. Pancras.

(From the London Medico-Chirurgical Transactions, vol. xii. part 1.)

The acknowledged frequency of cases of small-pox subsequent to vaccination, in all parts of the country, is such as to have excited, in no inconsiderable degree, the fears of many, and the anxieties of all. No one can look back upon the history of the last few years without feeling sensible that these unpleasant occurrences are on the increase, and it becomes, therefore, a matter, not of curiosity merely, but of real necessity, to attempt some regular investigation of the subject. The diffi-

* P. 121.

† Dr. Lucas, even on his own theory, is probably mistaken in expecting any assistance from the elastic power of the blood-vessels, because the heart or other propelling power would expend as much force in distending the vessel and overcoming the elastic resistance, as would be derived from elasticity in the subsequent contraction.

culty cannot be met by mere reference to the fact, that small-pox, once gone through, does not always secure to the subject immunity from a second attack. Cases of small-pox after vaccination are, beyond all comparison, more frequent than cases of *secondary* small-pox. The latter were, at all times, objects of curiosity, even to the older members of the profession. There are few who have not seen repeated instances of the former. Within the walls of the Small-pox Hospital, the latter were rarely seen. The former constitute, at the present time, a considerable proportion of the admissions into that institution.

With the view of illustrating this point, and also of showing how far the prevalence of small-pox, after vaccination, is on the increase, I have, in Table No. 1, given the total number of admissions into the Small-pox Hospital in ten different years, distinguishing such as occurred after real or *presumed* vaccination.* From this table it appears, that, in the year 1810, the proportion of cases of small-pox succeeding vaccination to the whole number of admissions, was as 1 in 30; in 1815, as 1 in 17; in 1819, as 1 in 6; in 1821, as 1 in 4; and during the year 1822, as 1 in $3\frac{1}{2}$.

Above 100 cases have occurred at the Small-pox Hospital during the last three years, the greater number of which fell under my own observation. Fifty-seven were admitted in 1822. The opportunities which have thus been afforded to me of observing small-pox, as it occurs subsequent to vaccination, have been tolerably extensive, and sanction, in some degree, the liberty which I presume to take, of laying the results of my observation before the notice of my professional brethren.

The occurrence of small-pox after vaccination is a subject of very considerable pathological interest. Independent of its importance, as a question affecting the world at large, it affords curious matter of inquiry to the investigator of disease. It forms a link in that chain of facts which bear upon the general influence of the variolous poison upon the animal economy, and the several modifications of which it is susceptible; and, to be thoroughly understood, it must be viewed in conjunction with them. The subject is one of no ordinary difficulty; but it is not my intention, on the present occasion, to enter upon it in that detail which I believe it to deserve. My remarks will be very cursory, and my principal design to put upon the records of the society some evidence that no fact which has reference

* All cases are here entered as having undergone vaccination, where the cicatrices were apparent, or failing that criterion, where the patient had a *distinct* recollection of the arm having risen, and of the general progress of the disease. Such cases as were *known* to have failed are *excluded.*

to the great question of vaccine protection, is overlooked or concealed.

I shall first inquire in what manner, and to what extent, the effects of the variolous poison upon the animal economy are modified by the influence, previously exerted, of the vaccine virus. I shall then offer a few reflections on the causes of the occurrence of small-pox after vaccination, and on the sources of difference in the degree of modifying influence which vaccination exerts.

It is almost unnecessary to remark, in the first place, that, in a very large proportion of cases, the same immunity is afforded by vaccination as by once undergoing the genuine variolous disease. What the *exact* proportion is, we are unable to ascertain. It does not even appear that any approximation to the truth, which can be much relied on, has yet been made. We may even go further, and be warranted in saying, that no calculations tending to establish this point, which are made in the present day, can reasonably be expected to hold good in future; and the reason is obvious. The failures of vaccination are now far more numerous than they were ten years ago, and no certainty exists that they have yet reached their maximum.

In cases where the vaccine virus fails to impart a *perfect* security from the future influence of the variolous poison, it serves, at least, to modify *certain* of its effects. These it is important to investigate.

1. Vaccination does not appear to lessen the violence, or shorten the duration, of the first or eruptive stage of fever, which is generally as severe, and even sometimes severer and longer in its duration than that of the casual confluent small-pox.

2. It does not appear in like manner to influence the *quantity* of eruption upon the skin, so much, at least, as has been generally imagined. It is true, that in many cases of small-pox, subsequent to vaccination, the eruption has been very scanty; but, in a large number also, I have seen it very copious, more particularly about the face, breast, and upper extremities, and occasionally fully equal, in point of *quantity*, to what is seen in the worst kinds of confluent or coherent natural small-pox.

3. The great power of vaccination unquestionably consists in modifying the *progress of inflammation* in the variolous eruption; and here it cannot fail to attract observation, how strikingly opposed to each other, in this respect, are the influences of inoculation and of vaccination. Inoculation lessens the *quantity* of eruption, but does not alter, in the slightest degree, the progress of inflammation in that which *is* brought out. Vaccination, on the other hand, while it does not sensibly affect the *quantity* of eruption, always influences, more or less, the progress of in-

flammation, however copious the eruption may be. The same desirable result, the diminution of mortality, is obtained in either way. By checking the quantity of eruption, or the degree to which inflammation in it extends, the disease is prevented from bringing on those impediments to the functions of respiration and perspiration, which occasion secondary fever, and endanger life.

In all, or nearly all cases of natural and inoculated small-pox, the eruption proceeds to ulceration, more or less superficial, according to the violence of the disease; and the ulcers heal by the common process of scabbing and cicatrization. In cases of small-pox, however, subsequent to vaccination, the cutaneous inflammation is checked at so early a period, that the fluid in the vesicles seldom reaches the state of pus, the cutis vera is never ulcerated, and consequently the healing process takes place by the conversion of the vesicles into tubercles, and their subsequent *desquamation*. This constitutes a very well marked and important character of the vaccine or modified small-pox. A similar modification of the variolous inflammation of the fauces and trachea undoubtedly takes place; but the exact nature of the difference it is, in this case, more difficult to define.

4. Though vaccination modifies, in a large proportion of cases, the progress of inflammation in the skin and throat, it is curious to observe that it does not always affect the course of the disease, when the variolous poison fixes itself on other parts, more particularly on the brain.* It is, in this manner, that small-pox, after vaccination, occasionally proves fatal.

The following cases will illustrate the position which is here advanced.

CASE I.

Variola succeeding vaccination, modified in as far as regards the eruption, but proving fatal by affection of the brain.—William Timms, æt. 30, labourer in lead works, in the habit of frequent intoxication, was admitted a patient into the Small-pox Hospital, Sept. 21, 1820. He had been vaccinated by Mr. Griffin, surgeon, of Deddington, Oxfordshire, 18 years previously. Two vaccine cicatrices were very apparent on the left arm. The eruption proved to be distinct, and on the 7th day it was drying on the face, and exhibiting the usual tuberculous character of modified small-pox. Throughout the whole course of the disease, however, there were some obscure marks of af-

* I may be permitted, perhaps, to remind those who have not been in the habit of seeing small-pox lately, that the eruption on the skin and throat is only one of the effects of the poison. Another, at least equally important, both with reference to pathology and practice, is that which is exerted upon the brain and nervous system; the chief evidences of which are delirium, inflamed eyes, stupor or restlessness, and disposition to erysipelas and gangrene.

fection of the brain. On the subsidence of the cutaneous inflammation, comatose symptoms came on, and he died on the following day.

The brain, on dissection, exhibited no appearances of recent disease.

CASE II.

Variola succeeding vaccination, modified as regards the eruption, but proving fatal by an obscure affection of the brain.—Ruth Beddoes, æt. 19, of gross and plethoric habit of body, was admitted into the Small-pox Hospital, Sept. 28, 1822, with a distinct and mild eruption, attended, however, with considerable conjunctival inflammation. She had been vaccinated five years previously, at Bishop's Castle, in Shropshire. The arm *inflamed severely*, and for a long time afterwards was kept in a sling. A very small vaccine cicatrix was observable in her left arm.

The cutaneous eruption passed through its stages rapidly; but the appetite never returned. On the eighth day, ophthalmia came on with great violence, yielding, however, to the free use of the lancet. Five days afterwards, the arm in which she had been bled became affected with severe erysipelas, which subsequently attacked the leg of the opposite side. Four days after this, violent delirium supervened, and she gradually sunk into a state of low typhus, in which she died. On opening the head, no morbid appearances of any kind could be detected, nor were there any traces of disease in the thorax or abdomen.

Having thus described the manner in which the effects of the variolous poison are modified by previous vaccination, I proceed to notice the *degree* to which such modification takes place. This varies very greatly;—to an extent, indeed, hardly conceivable by those who have not paid minute attention to the subject. Sometimes the disease, after vaccination, is so *highly* modified, that physicians can scarcely think themselves warranted in calling the complaint small-pox. It has all the characters of *varicella*, and has even been confounded with those slight papular eruptions which are met with in particular habits, and in irritable skins, more especially in warm weather.

On the other hand, the modification produced by previous vaccination is, in some few cases, so *trifling*, as hardly to be perceptible. Between these extremes, every possible gradation has been noticed; as the practice of the Small-pox Hospital, during the last year, has abundantly testified. It is highly satisfactory to know, that the instances of *complete failure*, from well ascertained vaccination, are very few in number, and will hardly bear a comparison with those numerous instances, in which the disease was so modified by it, as to preclude *all* anxiety for the patient's safety. Of the fifty-seven cases of

small-pox, after vaccination, admitted into the Small-pox Hospital in 1822, forty-four were discharged in perfect health *within* fourteen days from the period of their admission.* There were five fatal cases. The history of one of these (Ruth Beddoes) has been already detailed; and it is evident from the reported state of the arm, that the vaccination, in this instance, was not trustworthy. It is, moreover, fair to presume, from the *high* degree of inflammation which attended the process of vaccination, that there was a strong *predisposition* in this constitution to suffer from the variolous poison, and the result would, perhaps, have been equally fatal, had the patient taken small-pox by inoculation. The same degree of doubt attaches to the remaining four. In two of them, the cicatrices were very large and irregular. In one, *no* cicatrix was discernible; and in one only could it be said, that the scars were tolerably regular.

In the present state of the country, it appears highly desirable that some investigation should take place into the real causes of the occurrence of small-pox after vaccination, in order to determine, if possible, how far there is any probability of our being able to obviate them in future. The following observations are thrown out with the view of assisting in the determination of this question:

1. Small-pox after vaccination, unquestionably prevails in particular families; showing, that in them there exists some peculiar susceptibility of the variolous poison. Various instances of the kind have fallen under my own immediate observation, the most striking of which is the following:

George Ferriman, æt. 30, was admitted into the Small-pox Hospital Oct. 28, 1822, with *pretty severe* modified small-pox; and with him were also admitted his two children, Thomas and Harriet, both labouring under a *very slight* form of the same disease. The father had been *inoculated for small-pox* when a child, and was always considered to have passed through the disease in a regular way. His children had been *vaccinated*, and their arms exhibited very perfect cicatrices.

I have seen small-pox attack three individuals of the same family, who had been vaccinated at different ages, in different places, and by different persons. I witnessed this, during the last summer, in the family of a medical practitioner, in the neighbourhood of Red Lion square.

2. It is certainly worthy of observation, that the great majority of cases of small-pox subsequent to vaccination, which have occurred at the Small-pox Hospital, have been persons between the ages of 15 and 21. Nineteen is the average age of the

* Table No. 4 exhibits an abstract of the periods of their duration in hospital.

whole, as the Table, No. 2, will show. How far this may depend upon accidental causes, or upon the length of time which has elaped since the general diffusion of vaccination, I am unable to speak decisively. From the fact, however, that many of these persons had been frequently and thoroughly exposed to the contagion, at former periods of their lives, I am induced to entertain the notion, that there is something in the habit of body peculiar to that age, which renders the system more than usually disposed to suffer from the influence of the variolous poison.

The circumstance now adverted to has lately become obvious to the world, and it has revived an opinion entertained in the earlier days of vaccination, that its influence on the system wears out in the progress of life, and requires periodical renewals. The notion has latterly been acted upon to a great extent; but I have not been able to ascertain, that the results of *revaccination* correspond with the theory which leads to it.

3. In any investigation of the causes of small-pox subsequent to vaccination, it would be improper to overlook the remarkable connexion that subsists between the degree of perfection in the vaccine cicatrix, and the violence of the secondary disease. This important fact was forced upon my attention by the results of the last year's experience at the Small-pox Hospital. It is, indeed, in opposition to the opinion entertained by several authors of acknowledged reputation; but the extent of my opportunities enables me to speak with much confidence on this point. When the scar on the arm is perfect,—that is, distinct, circular, radiated, and cellulated; but, above all, when it is small, so that it may be covered by a pea;—the secondary affection (if from peculiarity of habit, or any other less ascertained cause, it does occur,) will be slight, and hardly deserve the name of a *disease*.

On the other hand, whenever the scar is large, and bears the marks of having been formed by high local inflammation, and wants the other distinctive characters just enumerated, the chance of small-pox occurring in after life will be greater, and, *cæteris paribus*, there will be a stronger likelihood of its proving severe.

This principle receives a striking confirmation from what takes place in *revaccination*. Where the cicatrix is perfect, it is impossible, or nearly so, to reproduce the vaccine disease in any thing like its genuine form. In proportion to the imperfection of the cicatrix, will be the degree of approximation of the *second* to the *primary* vaccination.

These considerations tend to establish, *as a pathological principle*, that the occurrence of small-pox, subsequent to vaccination, is dependent upon the *intensity of the vaccine influence*,

as primarily exerted; and they lead to the belief, that the appearance of the cicatrix may be taken as a *measure of that intensity.*

4. The last point to which I am desirous of directing the attention of the society is the fact, that a very large proportion of those persons who have been admitted, during the last three years, into the Small-pox Hospital, having the disease subsequent to vaccination, had been vaccinated in the country. This may be considered, perhaps, as an *accidental* circumstance. It may be argued, that the domestic servants in London, who, of all persons, may most naturally be expected to resort to an hospital in the time of sickness, are, in a great measure, supplied from the country. It may possibly be owing, in part, to the susceptibility of the disease being increased (here, as in other instances) by change of air; but, making all necessary allowances, the disproportion between those who take small-pox, after vaccination in the country, and after vaccination in London or some other large town, still appears to me so great, that we must seek for an explanation which may have a wider range of influence. I have long been impressed with the notion, that practitioners in the country have frequently vaccinated with lymph, which was *not perfect* in its qualities. I am inclined to entertain this opinion, first, from having been able to trace several cases of small-pox after vaccination to *particular* villages, in counties bordering on the metropolis; and, secondly, from having observed, that a great proportion of those admitted into the Small-pox Hospital after country vaccination, had *large*, *irregular*, and therefore *imperfect* cicatrices.

If the notions which I entertain of the influence of vaccination on the animal economy, and on the causes of its occasional failure, are correct, their general diffusion might assist, not only in upholding vaccination as an object of great national and individual importance, but in checking those unpleasant occurrences which are now making such alarming inroads on the confidence of the public in the vaccine protection. It would induce practitioners to revaccinate, with fresh and genuine lymph, those whose arms do not exhibit the perfect cicatrix;—it would lead those in the country to apply more frequently to large towns for a supply of recent lymph;—it would point out the propriety of their putting less confidence than heretofore in points and preserved lymph;—and it might impress upon all the *indispensable* necessity of a close attention to every part of that process, which, though of trifling import at the moment, is yet of incalculable consequence to individuals in every future period of their lives.

APPENDIX.

NO. I.

List of patients having Small-pox after Vaccination, admitted into the Small-pox Hospital, in two different periods, of five years each; showing the proportion such cases bear to the whole number of admissions.

Year.	Total admissions.	Total of Small-pox after Vaccination.	Proportion of Cases of Small-pox after Vaccination, to the whole number of admissions.
1809	146	4	One in 36
1810	149	5	30
1811	94	6	15
1814	79	4	20
1815	101	6	17
Total in five years.	569	25	22
1818	58	9	6
1819 To Sept. 7.	97	17	6
1820	142	25	6
1821	117	28	4
1822	194	57	3½
Total in five years.	608	136	4½

NO. II.

Table of the ages of the different patients affected with Small-pox after Vaccination, who have been admitted into the Small-pox Hospital during the last five years.

Under 10 years of age,	- - -	5 persons.
At 11	- - - - -	2
12	- - - - -	1
13	- - - - -	2
14	- - - - -	5
15	- - - - -	3
16	- - - - -	7
17	- - - - -	14
18	- - - - -	13
19	- - - - -	11
20	- - - - -	13
21	- - - - -	13
22	- - - - -	9
23	- - - - -	10
24	- - - - -	9
25	- - - - -	4
26	- - - - -	3
27 and upwards,	-	7
		136

NO III.

List of patients having Small-pox after Vaccination; distinguishing those vaccinated in the country from those vaccinated in the town, and those not ascertained.

Year.	Vaccinated.			Total Vaccinated
	In the country.	In London.	Not ascertained where.	
1809	3	1	0	4
1810	4	0	1	5
1811	5	0	1	6
1814	4	0	0	4
1815	5	1	0	6
1818	7	0	2	9
1819 To Sept. 7.	11	1	5	17
1820	6	1	18	25
1821	19	2	7	28
1822	35	6	16	57
Total.	99	12	50*	161

NO. IV.

Table, exhibiting the duration in the Hospital, of the cases of Small-pox after Vaccination, admitted into the Small-pox Hospital during the year 1822.

Less than 7 days, - - - - -	12 persons
——— 14 - - - - - -	32 - - - -
——— 21 - - - - - -	6 - - - -
——— 6 weeks, - - - - -	2 - - - -
Fatal Cases - - - - - -	5 - - - -
Total - -	57

Note.—By this paper, the reader should be put on his guard against a loose and inconclusive mode of treating the most important subjects, of late be-

* There is every probability, that the fifty persons set down in this column, were vaccinated in the country; as *residents* in town would hardly have expressed any doubts on the subject.

coming more common, in consequence of the inattention, or easy credulity of the profession. Notwithstanding that the author begins by stating the frequently acknowledged recurrence of *small-pox* after *vaccination*, he has not adduced a single proof of the *existence of the fact*. We hold the cicatrix to be incompetent testimony when taken *alone;* and this is the only semblance of evidence that his patients had the *vaccine* disease. That they might have been vaccinated we readily believe—but that they never had the *vaccine* disease, we think is conclusively shown by their subsequently having the *small-pox*. The immense majority of cases in which *perfect security* has been afforded against small-pox by vaccination, forces us to conclude that where the patient is not defended from the attacks of small-pox by the operation, the evil is attributable to the imperfection of the application—not to the want of proper efficacy in the genuine disease.—*Editor Journ. F. M.*

On the Cause and the Effects of an Obstruction of the Blood in the Lungs. By DAVID WILLIAMS, M.D. & M.R.C.S.L.

(From the Edinburgh Medical and Surgical Journal for October, 1823.)

While investigating the effects of the pressure of the atmosphere upon the lungs, on its admission into the cavities of the chest, I remarked several appearances, that militated against every hypothesis advanced, as to the cause of the unequal distribution of the blood after death. Reflecting on what I had witnessed, and thinking that I had observed a phenomenon that had escaped the attention of all the physiologists whose writings I had perused, it encouraged me to a further inquiry. The result of my inquiry has been favourable, as it will, in my opinion, unveil the mystery that envelops the cause of the comparative vacuity of the system circulating arterial blood, *post mortem*.

Before entering into the detail of my research, it will be better to premise the nature of the appearances alluded to. In one of my examinations, after the animal had been suffocated, by making a ligature on the trachea, during the acme of inspiration, previous to removing the sternum, I noticed, after the action of the heart had ceased, that the blood still flowed into the right auricle and ventricle, and consequently into the pulmonary artery; and that the propelling agent was so powerful, as to distend the right auricle and ventricle so forcibly after the pericardium was slit open, as to make it doubtful whether they would not burst; yet, at the same time, the pulmonary veins were comparatively empty. In this instance, it was evident that the blood was obstructed in its course through the lungs, and that this obstruction was one of the principal causes of the vacuity of the circulating system of the arterial blood. From the distention of the cavities of the right side of the heart, and the gorged state of the cavae, it was apparent that no obstacle impeded the return of the blood through

the capillaries from the system at large. In a mechanical point of view, the blood ought to have met with equal impediment in passing through these capillaries, as in passing through the final terminations of the pulmonary artery into the pulmonary veins. Impressed with the comparative emptiness of the pulmonary veins, and as no visible subsidence of the lungs had taken place, I was at a loss how to assign a cause for the obstruction on a mechanical principle. It occurred to me, that it was probable that the blood (from its vital principle being exhausted in its route through the system, and from its supply of nutriment from the thoracic duct being unassimilated) could not pass from the pulmonary artery into the pulmonary veins without first being acted upon by pure atmospherical air. As such a cause seemed likely to offer a solution for every phenomenon connected with the subject, the idea was cherished, and, for further satisfaction, the following investigations were instituted on the canine species.

Before proceeding to the relation of the investigation, we shall take a survey of a few of the illustrations given, as to the cause of the vacuity of the arteries *post mortem*, and as to the cause of the cessation of the action of the heart. The explanation offered by the illustrious discoverer of the circulation of the blood, as to one of the causes of the vacuity of the arteries *post mortem*, is worthy of our particular attention. Two centuries have elapsed since his time, yet scarce another ray of light has been cast on his discovery, though various hypotheses have reared their heads for the sole purpose, as it were, of receding again into oblivion. In his reply to the objection made to his great and transcendent theory of the circulation, on account of the vacuity of the arteries *post mortem*, Dr. Harvey thus expresses himself. "Vacuitas arteriarum in corporibus mortuis inde evenit, quod quando subsident (meatibus occlusis) pulmones, nec ulterius respirant, per ipsos sanguis libere non potest transire: perseverat tamen interim per temporis spatium cor in expellendo, unde et sinistra cordis auricula contractior, et ventriculus, pariterque arteriæ inanitæ et sanguinis successione non repletæ, sed vacuæ apparent: si simul cor pulsare cessaverit et pulmones respirando transitum præbere, ut in iis, qui aqua frigida submersi suffocantur, aut syncope et morte subitanea extinguuntur, pariter repletæ et arteriæ reperirentur."* I perfectly agree with Dr. Harvey in attributing one of the causes of the vacuity of the arteries after death, to an obstruction of the blood in its passage through the lungs; but as to the cause of that obstruction, we differ in opinion. From the tenor of the quotation, it is evident that he imputed the ob-

* Exercit. Anat. De mot. Cord. et Sang. Circul. 18mo. p. 157.

struction to the subsidence of the lungs, at the last expiration, causing the ultimate terminations of the pulmonary artery, and of the pulmonary veins, to contract or close, so as to prevent the blood passing *freely* from the right side to the left side of the heart previous to the suspension of the action of the latter. In support of his hypothesis, he asserts, that the arteries are full of blood after death, when the heart ceases to contract, and the lungs to respire, synchronously; and adduces, as a proof, the condition of the arteries in animals that are suffocated by submersion in cold water, and also in those that are cut off by syncope and sudden death. As Dr. Harvey's assertion has been questioned, that the arteries are full of blood *post mortem*, after suffocation from drowning, I beg leave to explain the matter. I must presume that Dr. Harvey's animals were suffocated without being allowed to ascend to the surface of the water, and that they were submerged at the acme of inspiration, and that they were examined within an hour and a half after the action of the heart had ceased. If so, he found the aorta full of blood, yet somewhat contracted. Again, if he did not examine an animal *post mortem*, after any other mode of death, until a considerable interval after dissolution, then he had no chance of detecting the error he had fallen into. After asphyxy from hanging, if the animal is immediately examined, the aorta will be found to retain its cylindrical shape, and, of course, to be full of blood; but after asphyxy from drowning, it will retain its cylindrical form for a longer period; and the reason will presently appear. Dr. Harvey only erred, then, in not qualifying his assertion, by limiting the fulness of the arteries within a certain period, after the suspension of the action of the heart. His opponents, on the other hand, have erred in not qualifying their assertion, by deferring the examination after the suspension of the action of the heart, until the tonicity of the arteries has had time to press as much of the blood as it is capable of doing into the venous system. Blood being found in the arteries of animals after death, was a very cogent argument in favour of the doctrine of circulation. Dr. Harvey, thinking the heart to be the sole propulsive power of the circulation, imagined that the presence of the blood in the arteries must have been the effect of the action of that agent ceasing simultaneously with that of the lungs; consequently, that the blood remained in the arteries, from the heart discontinuing its action, before it had propelled it into the venous system. He also conceived, that when the blood was absent from the arteries, that the action of the heart continued some time after it had ceased to receive blood from the pulmonary veins; and that it was those final propulsions that expelled the blood out of the arteries. It is difficult to conceive how Dr. Harvey

could have ever inferred that the action of the heart, and that of the lungs, ceased synchronously in suffocation from submersion, as the former continues to beat for some time after the animal is submerged. I think it must be admitted, in this instance, that his judgment was biassed. Whether or not, he brought forward the presence, as well as the absence, of the blood in the arteries, as evidence in support of his favourite hypothesis, that the heart was the exclusive impulsive power in carrying on the circulation of the blood through the system, Dr. Harvey had certainly insurmountable obstacles to oppose his discovering the cause of the obstruction of the blood in the lungs, as, in his days, the knowledge respecting the function of respiration was very limited.

It is truly surprising, considering the repeated opportunities which Mr. John Hunter had of observing the cessation of the action of the heart, that he never remarked the obstruction of the blood in the lungs on suspension of respiration. His words are as follows: "The diminution of the heart's motion upon stopping respiration, does not depend upon the immediate impression of improper blood on the left auricle and ventricle as a sedative, but upon the sympathetic connexion between the heart and lungs; one action ceasing, the other ceases; which sympathy is established, because, if the heart were to continue acting, it would send improper blood into the body, by which it can be supported only a little while. The right auricle and ventricle also cease acting, although not so early, and for the same reason; because, on the cessation in the lungs, the blood cannot receive any benefit in passing through them."*

Dr. Goodwyn, from his experiments, draws, among other conclusions, the following. "4*thly*, When respiration is obstructed, the florid colour (of the blood) is gradually diminished, and the contractions of the left auricle and ventricle soon cease. 5*thly*, This cessation of contraction arises from a defect of a stimulating quality in the blood itself. And hence, it follows, that the chemical quality which the blood acquires in passing through the lungs, is necessary to keep up the action of the heart."†

Bichat says, "Le mouvement du cœur peut se ralentir et cesser sous l'influence du sang noir de deux manières: 1°, Parce que, comme l'a dit Goodwyn, le ventricule gauche n'est point excité par lui a sa surface interne; 2°, Parce que, porté dans son tissu par les arteres coronaires, ce fluide empêche l'action de ses fibres, agit sur elles comme sur toutes les autres parties de l'economie, en affoiblissant leur force, leur activité. Or, Je crois que le sang noir peut, comme le rouge, porter à la surface

* On the Blood, p. 54.

† On Respiration, p. 85.

interne du ventricule aortique, une excitation qui le force à se contracter."*

Now, we shall proceed with our investigation. An animal was destroyed by securing the trachea at the acme of inspiration;† afterwards the sternum and cartilaginous ends of the ribs were removed. The blood appeared florid in the pulmonary veins, and in the coronary arteries through the pericardium. When the contractions of the left ventricle began to flag, the pulmonary veins became less and less distended, the blood changing from the florid to a darker and darker colour, as the current diminished. At the last contraction the veins flattened, and the left ventricle felt contracted. At this instant, an irregular or fluttering contraction of the muscular fibres of the right ventricle commenced, and continued for a short time, excited seemingly by the stimulus of distention, from the accumulation of blood in its cavity. After the irregular muscular action had ceased, the right ventricle felt soft and distended; the left was still contracted, but not so rigid as immediately after the last systole. The pulmonary veins appeared empty; one of them was opened, when only a temporary oozing of blood followed. The pericardium was then slit open, and the right ventricle became soon enormously distended, yet no blood flowed out of the punctured vein. Another pulmonary vein was opened, followed by a similar oozing of blood. The pulmonary artery was now punctured, and instantaneously the blood gushed out and deluged the shell of the chest. The aorta still retained its cylindrical form.

An animal was killed in the same manner as the above, in the presence of Dr. Traill. The blood in the pulmonary veins was observed to change its colour to a darker hue as the current lessened. Immediately after the last systole, the left ventricle felt contracted; then an irregular action of the muscular fibres of the right ventricle commenced, which lasted for some time. By mistake, one of the branches of the pulmonary artery, traversing the right lung, was divided, instead of a branch of one of the pulmonary veins, which poured out blood copiously. As soon as the mistake was detected, the bleeding was staunched by the fingers of an assistant. It is a mistake that is easily committed, unless the vessel is traced from its termination in the left auricle; for after the cessation of the action of the heart, the blood that remains in the veins is as dark as that in the artery. After opening the pericardium, the right auricle and ventricle became greatly distended. One of the

* Recherches Physiolog. p. 198.

† Mr. Editor, I wish to remark to your readers, who are not of the Medical profession, that an animal destroyed after this manner, is as quickly deprived of life as by submersion.

pulmonary veins traversing the left lung was now punctured, and a small quantity only of blood oozed out. Then, the blood which had accumulated in the left auricle and ventricle was discharged, by making a free opening into the former of the two cavities. After it was discharged, no more blood flowed or oozed out of that opening, or from the puncture which was made in the vein; yet, at the same time, blood continued to be returned vigorously from the system at large, to the right cavities of the heart. After a while, the pulmonary artery was punctured, which was followed by a discharge of its contents. The windpipe was lastly divided, and the lungs instantly collapsed with considerable rapidity; until then, no visible diminution in their bulk had taken place. To satisfy ourselves that the vessel that bled so freely was a branch of the pulmonary artery, a probe was passed into it from the right ventricle. After the action of the heart had ceased, we were much astonished at the irritability of the diaphragm producing repeatedly the most perfect contraction of that muscle, so as to heave up the abdomen powerfully. It was the only muscle excited; all the others were at rest.

To learn the *post mortem* appearances after asphyxy from drowning, two animals were suffocated. During suffocation, neither of them were allowed to ascend to the surface of the water. It is necessary to remark, that when you are in the act of submerging a dog, he makes a very rapid and full inspiration, so as to fill every air-cell—his lungs may be said to be in a forced state of distension. If he is not allowed to put his nostrils above the surface of the water, he will be suffocated with his lungs nearly in that state. The action of the heart continues for a few minutes after he is submerged; before the cessation of its action, some air will be expelled; but it must be trivial, from the fulness of the chest and the abdomen after he is drowned. One of the two animals was removed out of the water in three minutes after the cessation of the action of the heart. No water was found in the bronchia, but they contained some frothy matter. Was it the presence of this frothy matter that prevented the recovery of De Haen's dogs, though submerged a few minutes only? The other dog was removed out of the water in an hour and a half; his trachea and bronchia contained water. On opening their chests, the lungs in both were observed to be more inflated than the lungs of animals after hanging; and there was more humidity between the pleura costalis, and the pleura pulmonalis, especially in the animal that was immersed for an hour and a half. Pray what was the cause of that increase of humidity? Was it the effect of the pressure of the reaction of the elasticity of the ribs condensing the vapour between the pleura? The lungs of a dog, after drowning, collapse very imperfectly.

Dogs that are hanged in the usual manner, from the partial occlusion of the trachea, expel the air out of their lungs by their repeated efforts at respiring, and their chests became spasmodically contracted. When the animal is young, he makes a perfect wedge of his thorax, and his lungs readily collapse. For the sake of comparison, the blood in each side of the cavities of the heart of the two dogs after drowning, and of two dogs after hanging, was separately weighed; and, before their chests were opened, the trachea of each was tied. They were examined in pairs: the first pair at the interval of fifteen minutes, the other pair at the interval of an hour and a half after the cessation of the action of their hearts. Previous to removing their hearts and lungs for the purpose of weighing the blood, ligatures were applied on the blood-vessels to prevent extravasation; thus, on the *venæ cavæ* near the auricle, on the *vena azygos* as it enters the superior cava, on the *aorta descendens* low down in the thorax, on the *arteria innominata* and the left subclavian where they emerged out of the chest. In the two dogs, after drowning, the proportion of the blood in the left side was about one half of that of the right; and, in the two dogs, after hanging, the proportion was about one-fourth in the left to that of the right.

For illustrating the foregoing investigations, I shall briefly consider the subject under the following heads.

1*st*, The blood is obstructed in its passage through the lungs, on suspension of respiration, while its circulation through the other parts of the body continues.

2*d*, The obstruction of the blood in the lungs, on suspension of respiration, is not the effect of a mechanical cause.

3*d*, The obstruction of the blood in the lungs, on suspension of respiration, arises from a deprivation of pure atmospherical air.

4*th*, The blood which is found *post mortem* in the left auricle and ventricle, is the remnant after the last systole, and the subsequent draining of the pulmonary veins.

5*th*, The obstruction of the blood in the lungs, on suspension of respiration, is one of the principal causes of the vacuity of the system circulating arterial blood *post mortem*.

6*th*, The immediate cause of the cessation of the action of the heart, is a privation of its natural stimulus, arising from the obstruction of the blood in the lungs.

1*st*, The blood is obstructed in its passage through the lungs, on suspension of respiration, while its circulation through the other parts of the body continues.—The temporary oozing only of the blood on opening the pulmonary veins, immediately after the last systole, proved, beyond a shadow of doubt, their empty condition. That the circulation was still carried on in

the other parts of the body, was as satisfactorily proved by the distension of the right ventricle, after the pericardium was slit open. That the obstruction took place in the lungs, was obvious from the discharge of blood which followed the puncture of the pulmonary artery. Dr. Harvey's statement, that the blood was obstructed in the lungs on suspension of respiration, is therefore perfectly correct.

2*d*, The obstruction of the blood in the lungs, on suspension of respiration, is not occasioned by a mechanical cause.—The blood continuing to flow for a time through the lungs, after removing the sternum and cartilaginous ends of the ribs; and its suddenly stopping, without any subsidence of the lungs, while its circulation was carried on vigorously through the other parts of the body, sufficiently proved that the obstruction was not occasioned by a mechanical cause. Dr. Harvey was therefore mistaken in attributing the obstruction of the blood in the lungs to the subsidence of that viscus.

3*d*, The obstruction of the blood in the lungs, on suspension of respiration, arises from the deprivation of pure atmospherical air.—Before entering on the merits of this head, it will be advantageous to make a few observations on the function of respiration, and its effect on the blood. Professor Thomson, in his section on Respiration, says—"Respiration consists in drawing a certain quantity of air into the lungs, and throwing it out again alternately. Whenever this function is suspended, even for a short time, the animal dies. The fluid respired by animals is common atmospherical air; and it has been ascertained by experiment, that no gaseous body with which we are acquainted can be substituted for it;" and "that an animal can only breathe a certain quantity of air for a limited time; after which it becomes the most deadly poison, and produces suffocation as effectually as the most noxious gas, or a total absence of air."* On the effects of respiration on the blood, Dr. Mason Good tells us—"that the most important part of the general economy of respiration, consists in the change which takes place in the blood, in consequence of its being acted upon by the inspired air. We see the blood conveyed to the lungs of a deep purple hue, faint and exhausted by being drained in a considerable degree of its vital power; or immature and unassimilated to the nature of the system it is about to support, in consequence of its being received fresh from the trunks of the lacteals. We find it returned from the lungs spirited with newness of life, perfect in its elaboration, more readily disposed to coagulate, and the dead purple hue transformed into a bright scar-

* System of Chemistry, Sect. Respiration.

let. What has the blood hereby lost? How has this wonderful change been accomplished?"*

We learn from Professor Thomson and Dr. Mason Good two important facts. One, that an animal can survive only a very short time the suspension of the function of respiration. The other, that the blood undergoes a wonderful change in consequence of its being acted upon by the pure inspired air. We have already been taught two other important facts. One, that the blood is obstructed in its passage through the lungs on suspension of respiration, while its circulation through the other parts of the body continues. The other, that the obstruction of the blood in the lungs, on suspension of respiration, is not occasioned by a mechanical cause. From these four facts, then, I conclude, that the blood cannot pass from the system of the pulmonary artery into that of the pulmonary veins, without first undergoing those unknown changes from the action of the inspired air.

4*th*, The blood, which is found *post mortem* in the left auricle and ventricle, is the remnant after the last systole, and the subsequent draining of the pulmonary veins.—As the left ventricle is unable to propel the whole of its contents, during its contraction, a portion of blood remains in it after the last systole, as well as a portion in the left auricle. After the pulmonary veins have ceased receiving blood from the pulmonary artery, and after conveying blood for the last time, in a sufficient current to excite the contraction of the left ventricle, some blood, of course, will still remain in them, and that will keep draining by degrees from their ramifications into their trunks, and thence into the left auricle and ventricle. It has already been noticed, that, within a limited time after suspension of respiration, there is more blood to be found in the cavities of the left side of the heart, and the large vessels entering into and going out of them, after suffocation from submersion, than after suffocation from hanging; and the reason of this demands an explanation. Prior to proceeding to explain the phenomenon, it is necessary to have an idea of the difference in the volume of the lungs during the two extreme states of respiration. Sir Humphry Davy concludes from his experiments, that his own lungs, after a forced expiration, still retain 41 cubic inches of air; and that, after a forced inspiration, they contain 254 cubic inches of air. From this statement it appears, that there is a material difference in the volume of the lungs, after a forced expiration, and after a forced inspiration. This, then, is pretty near the difference between the lungs of a dog after suffocation from drowning, where

* Study of Medicine, Physiological Proem.

the occlusion of the glottis has been entire, and the lungs of one after hanging, where the occlusion of the trachea has been partial. We can easily imagine, that, when every air-cell in a lung is distended with pure air, the blood has a more expanded circulation than ordinarily, from its entering into the *rete Malpighii* that ramify on innumerable remote air-cells, that are ordinarily in a state of collapse, or something akin to it; consequently, that those vessels of Malpighi which ramify on those remote air-cells, must be ordinarily without any blood circulating through them; and also, that the ramifications of the pulmonary veins corresponding to them, must be ordinarily empty. Now, we can comprehend why, within a limited time after the cessation of the action of the heart, more blood is to be found in the cavities of the left side of that viscus after drowning, than after hanging. In the same ratio, then, as the lung increases in its volume, will the circulation of the blood be extended in the minuter branches of both the pulmonary artery and of the pulmonary veins; consequently, the more inflated the lungs are on suspension of respiration, the more blood will there remain in the pulmonary veins, after the last systole of the left ventricle; and the longer will the action of the *vis mortua* of the left ventricle be in propelling it into the aorta, which will account for the protraction of the propulsion of the blood from the aortic into the venous system. The distension of the pulmonary artery (which is effected by the obstruction and the tonic power of the veins), is one of the causes of the empty state of the pulmonary veins. I shall not at present explain my reason for attributing so considerable a power to the tonicity of the veins, as I intend offering at a future period (if not anticipated) a few observations on the moving powers of the circulation.

5th, The obstruction of the blood in the lungs, on suspension of respiration, is one of the principal causes of the vacuity of the system circulating arterial blood *post mortem*.—I think that the obstruction of the blood in the lungs, on suspension of respiration, has been satisfactorily proved; if so, one of the principal causes of the vacuity after death, of the system circulating arterial blood, has been explained; and we have only one other cause to illustrate. After the arteries have ceased to receive blood from the left ventricle of the heart, they contract by their tonic power, and thereby propel nearly all the blood they contain through the capillaries into the venous system. If there was no obstruction to the passage of the blood through the lungs, on suspension of respiration, undoubtedly an imperfect circulation would be carried on through the whole body, as long as the tonic power of the blood-vessels lasted; and a very dif-

ferent distribution of the blood *post mortem*, from that which we are in the habit of observing, would be the result.

6*th*, The immediate cause of the cessation of the action of the heart, is a privation of its natural stimulus, arising from the obstruction of the blood in the lungs.—This admits of a few objections. The action of the heart itself may be destroyed, by mental emotion, by an injury to the nervous system, by poison, by an electric shock, or its action may be suspended from an organic affection. The heart may be deprived of its stimulus from the loss of tone in the blood-vessels themselves, as in *asphyxia idiopathica*, as related by Mr. Chevalier.* Though it requires several restrictions, yet I think it will be admitted, that the action of the heart ceases in consequence of the privation of the stimulus, arising from the obstruction of the blood in the lungs; therefore, that this corollary is in the main admissible. The action of the heart continues for a while after the submersion of an animal, because the air that is pent up in his lungs contains a portion of that principle which is necessary for decarbonating the blood. As that principle becomes exhausted, the passage of the blood through the *rete Malpighii* becomes more and more impeded, and at last it is altogether obstructed. In proportion as the impediment increases, the circulation of the blood through the pulmonary veins becomes more tardy; and in proportion to the slowness of its motion, it loses its florid colour, and perhaps likewise the stimulating principle which excites the left ventricle to contract. In support of the latter remark, it is observed, that as the circulation of the blood through the pulmonary veins becomes retarded, the heart contracts weaker and weaker, as well as less and less frequently. After the last systole, a sufficient quantity of blood to fill the left ventricle is drained out of the pulmonary veins of an animal suffocated by submersion; but it does not excite the left ventricle to contract, either from its having lost the requisite stimulus, or from the gradual manner that it fills it. The purple hue of the lips and cheeks, as observed in apoplexy, does not arise from the passage of imperfectly decarbonated blood through the lungs, but from its slow movement through the system circulating arterial blood; and that hue becomes more visible as respiration becomes more difficult. This change of colour from slow motion is more rapid than any one who has not witnessed it can well imagine. Mr. John Hunter says—"We must conclude that the colour of the blood is altered, either by rest or slow motion, in living parts, and even in the arteries; this circumstance takes place in the vessels as the motion of the blood

* See Med. Chir. Trans. vol. i.

decreases."* The left ventricle, after the last systole, feels contracted, and it continues for a shorter or longer period in that state; as the blood is drained into it from the pulmonary veins, it gradually loses its rigidity, and becomes soft; but, after the action of the *vis mortua* has expelled as much of the drained blood as it is capable of doing, it again becomes contracted. This last circumstance is well exemplified in *post mortem* examinations of animals that have died previous to the muscular system being debilitated by disease. I noticed it particularly in a dog and a cat that had died of a convulsive disease, which the young of each species are liable to. I examined them in twenty-four hours after death; the pericardium of the latter was perfectly transparent. If my inference (that the action of the heart ceases, in consequence of the privation of its stimulus, from its obstruction in the lungs) be admitted, then the explanations offered by Mr. J. Hunter, Dr. Goodwyn, and Bichat, are obviously invalidated; therefore I shall not attempt any further refutation of their hypothesis.

We shall now examine how far the obstruction of the blood in the lungs, from a deficiency of pure atmospherical air, is adequate to explain the cause of some of the vital phenomena observed in health and disease. All physiologists agree in admitting the direct dependence of the nervous system upon that of the sanguiferous; therefore the nervous system must lose its energy, in proportion as the circulation is diminished or impeded. As the nervous influence is the stimulus which excites the voluntary muscular system into action, it follows, that the latter must be enervated in proportion to the diminution of the energy of its stimulus. We often observe prostration of strength arising from a very short continuance of anxious exertion. I allude to that exhaustion which comes on when the will directs the nervous stimulus to the action of a certain set of the voluntary muscles, at the same time checking the action of all the others. For example, two passionate lads fighting, in a few rounds (without any serious injury, or a long continuance of unusual exertion), will fairly come to a stand, breathless and exhausted, with a sense of anxiety about the præcordia. To recruit themselves, they will "set to," as it is very emphatically styled by the *fancy*, "bellows mending;" and, in a short time, the uneasiness about the heart will wear off, the strength will be recovered, and the contest will be renewed again with vigour. How are we to account for this rapid exhaustion, and equally rapid restoration of strength? Why, the muscles of respiration being semi-voluntary, are under the control of the will; when the will directs its whole attention to the action of

* On the Blood, p. 67.

any particular set of muscles, the function of respiration is checked, as long as the uneasy sensation, from the accumulation of blood in the pulmonary artery, can be endured. The effect of this partial stagnation of the circulation is a diminution of the nervous stimulus to excite the muscular system into action. The more intent the will is in directing the nervous stimulus to any particular set of the voluntary muscles, the less sensible will the system be to the uneasy sensation arising from the accumulation of blood in the pulmonary artery; consequently, the sooner will there be a diminution of nervous energy to stimulate the muscular system. To relieve the exhaustion of strength, and the anxiety about the region of the heart, the system demands an additional supply of pure air to unload the pulmonary artery. As this congestion is removed, the unpleasant sensations vanish; and as soon as the system is renovated with the vital stream, it is invigorated, and the individual recovers his wonted strength. This view of the subject teaches every pugilist a valuable lesson, that is, never to interrupt his breathing unnecessarily, or, in other words, not to exhaust his strength by too anxiously watching his adversary's motions. It is well known, that a passionate pugilist exhausts himself much sooner than a cool one; and the reason is, that the passionate pugilist, from his great anxiety, is less sensible to the uneasy sensation occasioned by the accumulation of blood in the pulmonary artery, therefore he interrupts his breathing for a longer period than the cool one; consequently, he exhausts himself sooner.

We shall next attempt to explain the cause of an occurrence which often happens when we are in the full enjoyment of our health, but which is oftener a concomitant of one of the most fatal of diseases; I allude to the rupture of the pulmonary artery. Hæmoptysis, in my opinion, is generally the effect of an accumulation of blood in the pulmonary artery, arising from a deficiency of pure atmospherical air in the lung, to decarbonate the blood immediately on its being conveyed into that viscus. The deficiency may arise from an interruption of the action of the respiratory muscles; as, from the immoderate use of the vocal organs; or, from inspiring rarefied and impure air; or, from the over-distension of the stomach, limiting the action of the diaphragm. Public speakers, singers, and performers on wind-instruments, are too well-known to be the frequent victims of hæmoptysis. The enthusiastic orator, stimulated by the interest of his subject, and proud of the approbation of his audience, endeavours, by every exertion, to make the greatest impression upon his hearers; by so doing, he interrupts his respiration, and occasions a partial accumulation of blood in the pulmonary artery. If this interruption is often repeated, the pulmonary artery must become more and more dilated, as

well as debilitated, and at last hæmoptysis will succeed; or, from habitual irritation, the foundation of a more insidious disease will be laid,—I mean tubercular consumption. If the last conclusion be correct, we can account for the frequency of tubercular consumption, in countries subject to sudden vicissitudes of the atmosphere. The consequence of sudden and frequent changes of temperature, must be sudden and frequent floods of blood, as it were, rushing into the lungs, especially into the lungs of those who have very delicate and highly sensible constitutions. The pulmonary arteries of open-chested persons easily accommodate themselves to those frequent torrents; as the blood, from the capacity of their lungs, is immediately exposed to the influence of the atmosphere, and undergoes the necessary change to admit it to proceed onwards without any delay. The pulmonary arteries of narrow-chested persons, on the contrary, soon feel the effects of a sudden increase in the circulating medium; for their lungs are unable to supply the increase of blood immediately with pure air, so as to enable it to proceed onwards without delay; therefore a temporary accumulation takes place in the pulmonary artery, which must irritate its extreme terminations.

To enter into the detail of every phenomenon, which, in my opinion, arises from the obstruction of the blood in the lungs, would lead me beyond the limits of an article intended for a periodical publication. If my corollary, that the blood is obstructed in the lungs from a deficiency of pure air, be correct, then I have no doubt that, from the labour of others, a rapid advancement will be made in the pathology of all the diseases of the respiratory organs. If our theory be admitted, it will probably lead, in the treatment of these diseases, to a firmer reliance on the efficacy of certain medicines of acknowledged power in regulating the circulation; and it will render most of us less susceptible of being made the dupes of charlatanism. It will, in many cases, suggest to us a valuable prophylactic; and it will procure a more ready compliance to our advice from many who are predisposed to diseases of the respiratory organs, more especially from public speakers. Most men are prone to turn a deaf ear to an advice which is to ward off what they suppose to be an imaginary evil. But, if we can convince a person that the blood stagnates in his lungs every time he interrupts his respiration, by uttering long periods, and that that interruption endangers the rupture of a blood-vessel, or that it engenders in his bosom one of the most unrelenting of diseases (tubercular consumption,) surely, under such an impression, no one will be found so careless of his health and life, as not to pay some share of attention, during his professional duty, to the important function of respiration.

Now, I flatter myself, that the cause of the phenomenon that reserved the discovery of the circulation of the blood to modern times, and to the honour of our country, has been disclosed, and that no one for the future, however sceptical, will be able to urge the vacuity of the arteries after death, as an objection to the doctrine of our immortal Harvey.

Cases of Ruptured Perinæum, treated successfully by Suture. By W. BAYER, Licentiate of the Royal College of Surgeons, Edinburgh.

(From the Edinburgh Medical and Surgical Journal for October, 1823.)

I OBSERVED, some time ago, in the London Medical and Physical Journal, No. 259, a communication from Mr. Alcock respecting laceration of the perinæum; and a case is given, which he treated successfully by ligature. The editors of that Journal seem to attach considerable importance to this operation, and regard it, if generally successful, as a great improvement in modern surgery. Now, some years ago I had successfully operated for lacerated perinæum; but it appeared to me such a simple and obvious method of managing the case, that I did not think it worthy of public notice. On making inquiry, however, of several surgeons of my acquaintance, I found that none of them had ever employed sutures in such cases, nor ever thought of them. I pretend not, however, to originality: for Burns says, in his Principles of Midwifery, that sutures have been resorted to, and ought always to be employed, when the cure cannot be accomplished without them. The greatest difficulty is, that one feels a delicacy in proposing the operation to our patients.

The first case of lacerated perinæum I met with, was in December, 1817, in a first labour. The lady was rather elderly; the labour was tedious; there was considerable rigidity of the *os uteri;* the external parts were also rigid and unyielding. The laceration took place at the moment the head was passing the vulva. The lady threw herself from me with a sudden jerk, so that I was unable to give the proper protection to the perinæum. The rent extended as far as the anus, yet the recto vaginal septum was not torn. A physician-accoucheur, a gentleman of eminence in his profession, who occasionally attended the family, happened to call at this time. He gave it as his opinion, that the conjoint effect of rest, position, frequent ablutions, and keeping the bowels open, ought to be tried. This plan was adopted. I had not an opportunity to attend to the progress of the case; but I have reason to believe that she did

not experience much inconvenience from the accident. She had no more children, but died of pulmonary consumption five years after.

I was not quite satisfied with the mode of treating this case; and had secretly resolved, when an opportunity offered, to have recourse to suture. It was not long before another case occurred. In the month of February, 1818, I had occasion to attend a young person in her first confinement. The labour was rather tedious; the pains strong and forcing; the *os internum* and *externum*, as before, rigid and unyielding. From the extreme restlessness of the patient, I was prevented from sufficiently guarding the perinæum at the time of birth; and, in consequence, laceration took place. The rent extended in an oblique direction close by the side of, and rather farther than, the anus; the rectum was not implicated. At first, I did not mention the accident; but at next visit I stated what had happened, pointed out the inconveniences which would probably result from neglecting to adopt proper measures, and explained the method whereby I proposed to prevent these inconveniences. The patient, happily, was tractable, and quite willing that I should employ any means I might think fit. I introduced into one of the largest curved needles, commonly found in a pocket-case of instruments, as broad a ligature as I conveniently could, and, in presence of a female attendant, made a suture midway between the vagina and anus, approximated the edges of the wound with as much tightness as I thought prudent, and tied the ligature. I had resolved to use two stitches; but the patient being averse to it, and the edges of the wound being well adapted to one another, I remained content with one. I directed my patient to lie as much as possible with the thighs close together, to use frequent ablutions with warm milk and water, dressed the parts with a pledget of simple ointment, and left some aperient medicine to keep her bowels open. The cure went on favourably, my patient experiencing very little inconvenience, until, four days after the operation, upon calling, I was rather surprised and displeased when my patient told me, that having felt much pain during the night, she made her female attendant cut and extract the ligature. However, upon examination, union had taken place along the whole extent of the rent; and I had an opportunity of ascertaining that the cure was complete, when I attended her in a second labour.

The next case of lacerated perinæum I met with, was in December, 1821. The patient was rather elderly, with a first child. The labour was very tedious; the parts, both external and internal, were remarkably hard and unyielding; the pains, for three days and three nights, very severe and forcing. I detracted blood to a considerable amount, but I cannot say that

the benefit attained was great or decisive. The laceration took place when the child was passing the *os externum*, in the same direction, and to the same extent as in the last case. I could not, as in my last case, attribute the accident to the restlessness of the patient, but to the sitting posture which is almost invariably adopted on these occasions, in the part of the country where I at present reside. There is no making them lie in bed while the child is passing. The prejudices of ages are in favour of the sitting posture; and prejudices are very difficult to erase, especially where the means of information are so limited. The practitioner is thereby often placed in an awkward predicament; he knows that the risk of hemorrhage is much greater in the sitting than in the recumbent posture; and he finds, to his great annoyance, that he cannot sufficiently protect the perinæum at the critical moment when the child is passing the vulva; for at that time one hand, and often both, are necessarily occupied by the child; and, after the fatigue of two or three sleepless nights, he is incapacitated from acting with that firmness and energy which he is master of upon more favourable occasions. I treated this case exactly as I did the last one; the ligature was allowed to remain eight days before it was extracted; the union was complete, and no inconvenience has since ensued.

In the Number of the London Medical Journal alluded to, Mr. Alcock hints, that at a future opportunity he means to change the ligature for some modification of the hare-lip operation. With all due deference to Mr. A., I do not think he will gain any thing by the change; indeed, if it is the twisted suture he alludes to, I cannot think it at all applicable to the operation in the perinæum. Posture I have found to be an useful and almost an indispensable auxiliary, along with the ligature; and how could the thighs be kept approximated with the pins in the perinæum? Should any of these unpleasant accidents again occur in my own practice, I have no intention of altering a mode of treatment which I have found to answer every useful purpose.

A correspondent, in one of the Medical Journals, inquires, What is the *rationale* of supporting the perinæum?—and may not the very accident we are anxious to prevent, be caused by counter-pressure? For a solution of such queries, I presume we must resort to experience, rather than to argument. I do not pretend to illustrate the subject; but I have found that, in all cases where I have been enabled to guard the perinæum with one, and occasionally with both hands, this accident has not taken place. The *fourchette*, I conceive, is always ruptured at the first confinement; sometimes the rupture extends halfway or more towards the anus; but as long as the sphincter ani is

not implicated, it is of little consequence. When the head presses upon the perinæum and vulva, counter-pressure, I apprehend, retards the delivery, and allows the parts opportunity to dilate, and afford a sufficient aperture for the head and body of the child to pass without causing laceration. Until convinced by demonstration of the inutility and mischief of such practice, I shall think that practitioner wanting in his duty, who neglects to protect the perinæum while the child is passing.

Bernard Castle, May 12, 1823.

Case of extensive Congenital Division of both the Hard and Soft Palates, successfully treated by Mechanical Means. By JAMES SNELL, Dentist, Member of the Royal College of Surgeons in London.

(From the London Medical Repository for November, 1823.)

THE extreme importance of any successful contrivance, in so distressing a defect as that of a fissured palate, will render unnecessary any apology for introducing the following case to the Profession.

An interesting young lady, now about sixteen years of age, has laboured under this distressful malformation from her birth. When an infant, it deprived her of the support of the breast,—the milk, when any could be drawn, being invariably ejected through the nose; and her articulation, from a later period to the time of my seeing her, was so defective as not to be understood but by those who were constantly about her. On her application to me about three months ago, the appearances were as follows:—The fissure commenced immediately behind the two anterior incisores, extending backward through the palatal portion of the maxillary bone, and through the os palati, velum pendulum palati, dividing the uvula, and giving rise to an unlimited communication between the nose and mouth.

When the case first came under my care, I was desirous of making the attempt to unite the edges of the soft palate, according to the suggestion of M. Roux;* but this mode of proceeding being altogether objected to by the parents, I was induced to try how far success might be attained by mechanical means. With this view, I obtained a correct model of the deficiency, from which a gold plate was first fitted to the roof of the mouth, as far back as could be worn by the patient, to the posterior part of which two pieces or flaps of Indian rubber were attached, thus filling up the deficiency of the soft palate. A small

* Medical Intelligencer, Vol. I. p. 98.

moveable piece of the same material was also attached, by means of a gold hinge, to the centre of the lower piece, to imitate as near as possible the natural uvula. A piece of ivory was next fitted to the upper or back part of the gold plate, and carried upwards until it came in contact with the remaining portion of the septum narium: this was, of course, firmly attached. The whole was held up in its situation by means of two gold springs soldered to the plate, which attached themselves round one of the molares on either side. It may readily be conceived that the introduction of such an apparatus must, in the first instance, cause great inconvenience. This was, however, overcome by perseverance on the part of the patient, who was soon convinced of a most material improvement in her speech, as well as of great increase of comfort while taking her meals; and to crown the whole, the parents were most agreeably surprised to find her voice possessed of considerable musical power, a qualification which none could have presumed to hope for. As the apparatus requires to be frequently removed that it may be cleansed, she is provided with two, in figure the exact counterpart of each other.

A Case of Laceration of the Perinæum, Urinary Bladder, and Rectum. By WILLIAM GAITSKELL, sen. Esq. Member of the Royal College of Surgeons, London.

(From the London Medical Repository for November, 1823.)

MAY the 28th, 1822, I was requested to visit Mrs. A. a healthy woman, thirty-one years of age, who had been delivered a fortnight before by an obstetrical Practitioner in her neighbourhood. Mrs. A. informed me that she had sustained a very serious injury in her labour, and wished me to inquire into her situation and to render her my professional services: on soliciting the particulars of her case, she furnished me the following narrative:—

On the 12th of May, 1822, about seven in the morning, she felt symptoms of labour, and desired her accoucheur to be sent for. He very soon attended, and assured her that the labour was a fair one, requiring no immediate assistance. He then left her, and called about ten, when she informed him that the pains were slight, but, if any thing, rather worse. He visited her again about one, when he examined into the progress of her labour, and assured her that every thing was doing well, and he hoped to deliver her about three. Between one and half-past two the pains slackened, when he requested her to lie on the bed in order that he might assist her, and assured her

that five or six pains would deliver her. At this examination he put her to exquisite torture, and subjected her to a very different examination from those she had experienced in her former labours.*

Finding the pains lingering, and having limited his time of delivery, he had recourse to such strong mechanical power for the extraction of the child, as to require her being firmly held on the bed, and this he continued for the space of three hours, with only short intervals of rest: she often called out for time and patience, declaring to him, from her feelings, that the pains were not natural, but artificial; and stating that she had a frequent and strong desire to make water. But without attending to her entreaties or complying with her wishes, he still persisted in pulling; when, about six in the evening, the head of the child was extracted.†

He now found a difficulty with the shoulders: to remedy this he asked for a roller, which he tied round the neck of the child, and pulled with such violence, that the shoulders, body of the child, and placenta, all came away together. He now desired her to be quiet for an hour; but she flooded so profusely that she grew faint, and was cautiously drawn up the bed to be placed more easy and comfortable. When the child was extracted, a sudden gush of urine took place,‡ occasioned by the rupture of the bladder; that viscus not having been emptied from four in the morning till six in the evening—a space of fourteen hours.

The next day Mrs. A. was pretty easy, and made a little water, but with great pain. On the third day the urine and fæces passed involuntarily, for she had no retentive power. This was mentioned to her accoucheur, but he observed that it was of no consequence, as time would rectify every thing. However, instead of things improving, they grew worse; and although the urine continually drained into the lacerated parts, and produced the most severe torture, he never suggested a remedy for her sufferings, nor inquired into the nature of her injury.

After enduring for a fortnight the severest torments, occasioned by the constant draining of the urine from the torn bladder into an extensive sore, I was called upon to visit her.

* Mrs. A. had borne two living children at the full period of gestation, and was each time attended by a female midwife; from both which confinements she recovered and did well.

† The fœtus had several cuts on the face, marking the application of the instrument, and the violent manner in which it had been employed.

‡ This was proved to be urine by the odour, the amniotic waters having been discharged three hours before, when the vectis was introduced for the extraction of the child.

On examination, I found the perinæum lacerated quite into the rectum, so that the strong sphincter muscle of that part was completely divided in front; consequently, the internal surface of the vagina, mouth of the womb, internal membrane of the rectum, and raw surface of the torn perinæum, were constantly washed with urine. From the same cause, the thighs and nates were excoriated and acutely painful. I proposed the best relief in my power, but assured her relatives that a perfect cure was impossible.

To give the bladder (which was torn in its cervix) a chance of healing, I passed an elastic gum catheter into that viscus, through the urethra, leaving the external end to terminate in a quart wine-bottle, while the other remained constantly in the bladder. By this expedient the bottle received the urine, and prevented the bed being wetted, or the urinous smell becoming offensive.

This plan afforded her great comfort, and in six weeks allowed the bladder to assume a healing process. At the end of three months the whole secreted urine passed through the natural passage.*

The external sore was washed with some cooling lotion, and emollient poultices were repeatedly applied.

About six days after the adoption of the above plan, I requested the opinion of my friend Dr. Blundell, who very readily gave his gratuitous attendance. He examined the injury with the greatest attention, and fully approved of my remedial means.

Twelve months after this extensive injury, she informed me that she was totally deprived of sexual sensation, that the prolapsus of the uterus and vesica urinaria was increased and attended with pain and sense of weakness in her loins, and that she had no retentive power in the rectum.

The perusal of this unfortunate case will, I hope, induce the young or inexperienced Practitioner to weigh well in his mind all the minute circumstances of his patient's situation, and to be well convinced of the necessity of such interference, before he dares to hazard the awful responsibility of introducing an instrument into the womb of a parturient woman, and of forcibly extracting the child. That the life of a female, at this interest-

* The healing of a ruptured urinary bladder is of such rare occurrence, that if Dr. Blundell and myself had not satisfied ourselves of the fact of previous rupture by passing a female catheter through the opening into the vagina—[the rupture was so extensive, that Dr. B. passed two fingers from the vagina into the urinary bladder],—it might have been disputed by the Profession.

When the bladder sloughs, the opening remains for ever after unhealed, and a perpetual fistula is the consequence. There are only two instances on record of the bladder healing after throwing off a slough, as was mentioned to me by Dr. Blundell.

ing period of her existence, should be put in jeopardy, or that she should be condemned to years of misery, from impatience of temper in the practitioner, or from gross ignorance of his professional duty, is a subject of moment to every mind which is interested in the credit and respectability of this department of medical practice.

Case of Hernia Cerebri. By Wm. James Goodeve, Esq. Member of the Royal College of Surgeons, Surgeon to the Clifton Dispensary, and Lecturer on Anatomy and Surgery in Bristol.

(From the London Medical and Physical Journal for September, 1823.)

May 15th, 1820.—Evan Hopkins, æt. thirty, a quarryman, while working at St. Vincent's Rock, was struck on the forehead by a stone about the size of a man's fist, which was hurled down upon him from a height of twenty feet. He was stunned by the blow, but soon recovered sufficiently to walk a distance of nearly half a mile. I found him more than half stupified, complaining of great pain in his head, with the scalp cut, and the frontal bone bared, but not fractured, for an extent of two inches above the left orbit. He was bled to the amount of twenty ounces, and directed to take five grains of calomel, with fifteen of jalap. Wound lightly dressed.

16th.—Slept well. Complains of pain in his head; pulse quick and strong; bowels not much open.—V.S. ad ℥xx. Mist. Cathart. Emp. Lyttæ nuchæ.

17th.—Better; bowels freely open.—Rep. Mist. Cathart.

18th.—Pulse rising; pain in the head returning.—V.S. ad ℥xvj. Rep. Mist. Cathart.

19th.—Keeps his hand continually to the left side of his head; is becoming confused in his intellects; half comatose, and scarcely able to speak or swallow.—Gave an enema, which returned almost directly.

20th.—Continues in the same comatose state. Cannot get him to swallow any thing, except a spoonful of tea now and then. The slightest pressure in the vicinity of the wound gives him severe pain; the wound itself discharges particularly white good pus; he has had two very smart rigors, and these succeeded by fever, his skin being very hot and dry.

21st.—Has his hand continually on his head, as if in pain, and groans, but does not articulate; the rigors longer and more frequent; the pulse neither quick nor full. With much difficulty got him to swallow five grains of calomel.

22d.—Bowels moved, but his condition not mended; he is

becoming more comatose, and his breathing difficult; he has been several times strongly convulsed; the wound is excessively tender, and rather puffy. Under these circumstances it was judged right to trephine him: I therefore enlarged the wound, found the bone apparently uninjured, (though pressure upon it gave considerable pain,) and perforated the skull. The dura mater was sound externally, and not at all detached from the skull, but puffed up as if by some effusion underneath: it was therefore divided by a small crucial incision. The opening gave vent to about a tea-spoonful of blood, and showed a quantity of serum collected under the arachnoid membrane, which was thickened and somewhat opaque. The incisions of the dura mater were enlarged as far as the margin of the trephine hole, when there immediately issued a very smart jet of arterial blood. This was allowed to flow for several minutes, and at length stopped by pressure of the finger upwards against the edge of the bone. On examining the circle of bone which was removed, I found that it was quite sound, and that it included half an inch of the left frontal sinus at its upper part. The wound was very lightly dressed with lint. The pain of the first incision roused the patient from his stupor, and he became almost ungovernable during the operation. After the operation his aspect improved, his pulse became less oppressed, and he seemed more sensible to what was passing around him.

May 23d.—Passed a tolerable night, but lies moaning and complaining of the pain on the left side of his head; the left eye is swelled; pulse 90, and of pretty good strength.—℞. Cal. gr. v.

24th.—Hemiplegia of the right side is coming on; he can scarcely open his mouth; is unable to articulate, and finds great difficulty in swallowing; has had long and severe rigors in the night; bowels open; wound discharges good pus.

25th.—Paralysis of the right side nearly complete, but he is continually throwing about the left arm and leg; the wound has a sloughy appearance; he swallows rather better to-day.—℞. Mist. Cathart.

26th.—Has been very delirious during the night, and, in spite of the hemiplegia, contrived to get out of bed and remain in a chair for two hours; pulse 90, and not by any means strong. —℞. Mist. Cath.

27th.—Less delirious, but incessantly throwing about his left arm and leg, and gathering up the bed clothes, but without any evident design.—℞. Cal. gr. viij.

28th.—More quiet. The calomel has procured two copious evacuations; the dura mater and subjacent parts begin to protrude through the trephine hole, above the level of the scalp; (sixth day from the operation).

19th.—Very restless and uneasy; incessantly tossing about in the bed and picking the bed-clothes.—℞. Cal. gr. v.

30th.—The calomel has produced no evacuation from the bowels, but the patient is altogether somewhat better; the tumour has subsided a little within the trephine hole.—℞. Rep. Cal. gr. v.

31st.—The medicine has not acted on his bowels, but his gums are a little affected; he is restless, and is conscious of pain if pinched hard either in the arm or leg. There are frequent spasmodic twitchings of the muscles of the leg, which he has been observed occasionally to move very slightly.—℞. Jalapæ, gr. xv.

June 1st.—Has had one copious evacuation, and appears in every respect better; tosses less about the bed; is quite ravenous for food, though he cannot articulate; he slept well last night, but lies moaning most piteously when awake.

2d.—Moves the right leg freely; takes a good supply of jelly, milk, and panada; pulse 90, and of moderate strength; the surface of the dura mater looks sloughy.—℞. Pil. Cath. ij.

20th.—During the ensuing fortnight no material alteration took place in his general condition. His pulse ranged from 80 to 90; his appetite, though variable, was on the whole sufficiently good; the bowels were kept open by calomel and rhubarb. The paralysis of the right arm remained complete, but he could move his right leg without much difficulty; he continued unable to articulate; his urine and fæces have come away involuntarily. All this time the hernia cerebri has been gradually increasing in size, protruding through the trephine hole, and enlarging even where contiguous to the bone, so as to push up the surrounding integuments. It is now of an irregularly rounded form and fungous appearance, two inches in height, and as much in diameter: its upper surface is divided into three distinct lobules by as many slight furrows, and these lobules have rather a sloughy appearance. The tumour is highly vascular, and has several times bled freely, but it is not by any means tender to the touch. It is kept covered with a linseed-meal poultice.

July 1st.—The tumour is evidently smaller, from sloughing of its surface. He can now pronounce Yes and No very distinctly, and has been able to move one of the fingers of his right hand. Slight tremors have been noticed in the course of the muscles of the fore-arm. He takes a good supply of broth and jelly, and is now conscious of the passage of his urine and fæces.

3d.—The sloughing of the tumour proceeds with activity, and he is more feverish and restless.

4th.—Much pain in the head, with swelling of the eyelids

and integuments of the nose. There has been a considerable discharge of bloody serum from the tumour, which is on the whole rather larger just now, (about the magnitude of a middle-sized orange,) and of a soft spongy feel. Since the discharge appeared, he has been rather easier.

5th.—A large portion of the tumour, as much as would fill a dessert-spoon, has come away: its consistence is between that of a fungous tumour and coagulated blood. The man's aspect is very much mended: he looks cheerful, and is able to articulate monosyllables pretty distinctly; he can now raise his right arm and hand ten or twelve inches from the bed. The paralysis of the right side of the face remains complete.

8th.—A large breach has been made in the upper part of the tumour by sloughing, and this gives vent to a very copious, thin, bloody discharge. He can now utter two or three short sentences very intelligibly.

12th.—Much of the tumour has sloughed away, and he appears to be going on in every respect remarkably well; takes an adequate supply of nourishment; has a good pulse; and his bowels are sufficiently open.

14th.—Found the tumour much enlarged, and having the appearance of a spongy vascular substance, which has been bleeding copiously, and is now pulsating with violence. He has been vomiting incessantly for several hours; his face is much flushed, and his pulse 120. The vomiting is now stopped. I know not to what cause this increased action in the tumour is to be ascribed, unless it is that his friends have been more than usually zealous in plying him with nutritious food for the last two or three days. His right arm is again powerless, and he is unable to articulate.—℞. Ol. Ricini, ℥j. statim.

15th.—The medicine has acted pretty well, but he lies in a drowsy comatose state; the fungus appears disposed to slough. —℞. Cal. gr. v.

16th.—This fungus has now disappeared, leaving the tumour in the same state as before the formation of this last substance. His aspect is better to-day, and he has recovered the use of his right arm.

17th.—There is a slight fissure round the basis of the tumour. He can now articulate more distinctly. He is allowed to take only vegetable food, and of this but sparingly. Bowels kept open by calomel and ol. ricini alternately.

21st.—The tumour remaining of the same size, with little disposition to slough, but apparently of a tougher consistence than before, I was induced to try the effect of stimulating it with red precipitate, combined with soap cerate.

22d.—A very free discharge has taken place; the outer sur-

face is nearly removed, and its place supplied by florid granulations. His head has been more than usually in pain.

23d.—He is restless, uncomfortable, and languid; pulse quick; appetite not so good; the tumour quite florid, and rather larger. Seeing no good effect to result from this application, it was discontinued, and the poultice resumed.

24th.—Not so well to-day; pulse quick and weak; prostration of strength very considerable. A great deal of a brain-like substance has found its way through the hole in the centre of the tumour. Into this opening I can pass a probe to the depth of an inch below the level of the cranium, as if into the sac of an abscess, and move it about in every direction without difficulty.

25th.—Lies in a comatose state, and has frequent short rigors.

26th.—Nearly the same. There is a considerable discharge from the surface of the tumour, and from the brain itself. The probe drops by its own weight into the brain, to a depth of nearly two inches. His urine passes unconsciously.—℞. Cal. gr. v.

27th.—Free discharge from the wound; probe sinks as far, though not quite so easily, into the brain. He is rather less comatose, and his aspect is better; his stools are very black, and passed unconsciously.

28th.—Tumour rather smaller; suppuration free. The probe passes nearly three inches into the substance of the brain, and without producing the slightest pain.

31st.—Tumour lessening; suppuration free; general condition improved; suffers frequent pains in his right arm.

August 3d.—Tumour sensibly decreasing; bowels regular; tongue clean; appetite good; countenance improved; can raise his right arm, and is able to ask for food.

6th.—Has continued well until last night, when he complained of severe pain in his head, which pain has continued ever since. The bowels were freely open yesterday, and I know not to what cause this indisposition is owing, unless it is to the extreme agitation he suffered from a heavy thunder-storm last night.—℞. Cal. gr. v.

13th.—Very much better; tumour lessening; his powers of speech and motion returning.

20th.—Tumour lessening; hardly any suppuration from it.

29th.—The man is convalescent; is able to walk about, and is recovering the use of his tongue, but has a somewhat idiotic expression of countenance. Very little of the tumour is now left above the level of the trephine hole.

Sept. 10th.—No vestige of the tumour; wound completely cicatrized.

20th.—Is regaining strength, and has a less idiotic aspect.

Oct. 5th.—Suffers occasionally from slight pains in his head.

Nov. 13th.—Is able to walk as far as Clifton and back again (a distance of three miles). Had an epileptic fit on the 11th. —R. Pil. Cath. iv.

Dec. 20th.—Epileptic fits recur once or twice in a fortnight, notwithstanding a very vigilant attention to the state of the bowels, and the frequent use of aperient medicine.

March 20th, 1821.—Still liable occasionally, though much less often, to epileptic fits. He has not yet lost the idiotic aspect, nor is he able to do any work.

July 15th.—Stronger and better in every respect; less liable to the fits.

August 20th, 1822.—Quite well. Has resumed his work as a labourer for some months past. He has had no return of the fits since this time twelvemonth; nor does his countenance exhibit any of that vacuity by which it was so long characterized.

Clifton, Jan. 11th, 1823.

Case of General Dropsy, arising from extensive Ossification in the Heart, and Adhesion of the Pericardium to this Viscus. By H. W. CARTER, M. D.

(From the London Medical Repository for November, 1823.)

UPON the death of my late colleague, Dr. Packe, which took place in March, the care of his patients in the hospital devolved upon me, until the election of a physician to supply his place. Among other cases, I found one of general dropsy. The individual, whose name was Austen Upton, ætatis thirty-seven, was moribund when I saw him first, viz. March 14th, and he died two days after.

I obtained the following statement of symptoms from one of the pupils:—"The man was admitted with general dropsy. He complained of difficulty of breathing, accompanied by a sense of weight and oppression at the chest, inability to rest on either side, or indeed in any position, unless his head and shoulders were considerably raised. His countenance was much tinged with bile, and expressive of anxiety. His pulse was weak and irregular. Tongue was loaded with a brown fur. Bowels confined, and what fæces were passed were not natural. His skin was dry. Little urine secreted, and that little was of a deep orange colour. On the 12th March his legs were scarified, and a great quantity of fluid escaped. Two days after, the punctures assumed an unhealthy appearance; the legs became much inflamed, particularly the right one, which sphacelated."

Dissection.—The body was examined on the 18th, and the

appearances were as follow:—Upon opening the thorax, which contained a large quantity of yellow fluid, the lungs, particularly on the left side, were found adhering, by strong filamentous bands, to the pleura costalis, and they exhibited a slight blush of inflammation. The heart was inseparably attached throughout the whole of its surface to the pericardium. The semilunar, mitral, and tricuspid valves were ossified, as were also the coronary arteries. Coagula of blood were found in the ventricles, and in various parts of the substance of the heart marks of incipient ossification were discernible.

In the abdomen, the liver was rather larger, and more hard than natural. The villous coat of the duodenum was very vascular. There seemed to be some obstruction of the gall ducts. No other morbid appearance was detected.

The brain was free from disease.

It is rarely, I think, that adhesions so strong and so complete are found between the pleura which covers the lungs and that which lines the ribs, or between the pericardium and heart. Still more rarely do we meet with ossification of the heart to so great an extent as had taken place in the instance before us. Dr. Baillie, in his well known work, informs us, that "a portion of the heart has been observed to be converted into bone, and that earthy matter has also been found deposited in the muscular substance of the heart;" but he adds, that "neither of these appearances have come under his own observation, and that they are to be looked upon as very uncommon."* Morgagni notices a case from Platerus, of a merchant in whom "the right ventricle was internally so hard, every where rough, and in some measure scaly, that the hand being thrust into it, was hurt by the roughness of the scales."† He then proceeds to relate a dissection which he made in 1745, where bony matter was found in the heart. Baron Corvisart mentions one case of this kind, which had fallen under his own observation, and which it would seem was the only one he had met with. The case he certainly deemed an extraordinary one, for he brings forward two others in support of it: the one by Haller, the other by M. Renauldin.‡

Upon the whole, the foregoing case of Upton must be looked upon as one of no common interest.

In the short history of the above case, furnished by Mr. Peter, one of the pupils of the hospital, it is mentioned, that towards the close of the disease the lower extremities were punctured, and that the punctured places assumed, in two days,

* Baillie, Morbid Anatomy, page 45.

† Morgagni. Ep. XXXVII. Art 16.

‡ Corvisart. Treatise on the Diseases and Organic Lesions of the Heart, &c.—Chap. IV. sect. 2.

an unhealthy appearance, became much inflamed, and that ultimately the right leg became gangrenous. Here is one instance, among many which have fallen under my observation, of irremediable mischief arising from scarifications of the lower extremities in cases of dropsy. All that I have ever witnessed of this practice, from the time that I first became a student in physic, has tended to impress more and more upon my mind the conviction that it is always hazardous practice; and I consider it to be more especially dangerous, where the dropsical affection is thought to depend upon some disease of the heart; for in these cases I am inclined to think, though a writer of high authority seems to question the fact,* that the extremities are peculiarly liable to mortification. For my own part, whenever I wish to evacuate the fluid from dropsical limbs, I shall employ acapunctura, which I have found in several instances safe and effectual. The punctures made by the needles are so small, that there is little danger of their running into erysipelatous inflammation, while they are quite sufficient to allow of the escape of the effused fluid. Several needles may be passed into each leg, and the result will doubtless be satisfactory. As much relief will be afforded as by scarification, and the risk attending the latter operation will be avoided.

Observations on the Tread-Mill.† By B. Hutchinson, Esq. Fellow of the Royal College of Surgeons in London.

(From the London Medical and Physical Journal for November, 1823.)

It must be allowed that the public (equally with ourselves, who are bearing the very easy weight of a very amicable controversy,) are much indebted to you for the admission into your Journal of observations, which, on a first and superficial view of the subject, might appear to be foreign to the general and professed objects of your useful and excellently conducted work. When, however, we take into our consideration the improvement of the health of the numerous inhabitants of our prisons, both physical and moral; and that the question of the tread-mill's expediency or inutility is deeply involved in this inquiry; all sentiments of that nature must completely give way

* Corvisart, Chap. IV. sect. 3, ad finem. "We may conclude, from these cases, that sphacelus of the extremities is not a frequent consequence of diseases of the heart or great vessels."

† The subject of this paper is likely to be very interesting at the present time, as much clamour has been made against the introduction of the Tread-Mill in this country. As this paper is by a man of experience, and consists, in great part of matters of fact, it must settle the question, in favour of the use of this important instrument of correction.—Editor.

to the gradual establishment of truth and positive facts, and to the exclusion of all hypotheses and preconceived theories.

I beg thus publicly to thank Dr. Good for his donation of Sir John Cox Hippisley's "Correspondence on Prison Discipline," and for the candour and liberality with which he has received my remarks. The careful perusal of this "Correspondence" has not produced the slightest change in my sentiments on the subject, which has so seriously and laudably engaged his closest attention. My personal and daily observations of the excellent and efficient operation of the tread-mill, as far as regards the health of the prisoners in the house of correction at Southwell, tend to impress on my mind a conviction of the accuracy and truth of my statements in the communication which you did me the honour of publishing two months back, and which will be further illustrated in the course of this letter by an experimental inquiry, made before the Rev. J. T. Becher, one of the visiting justices of this house of correction.

Although I cannot attach that importance to my omission of dates and numbers, which Dr. Good considers as points of the utmost moment in the present inquiry, I shall nevertheless undertake to furnish the Doctor with the information he solicits, and which I have obtained through the permission of Mr. Becher. This information cannot be conveyed in a more distinct manner than by detailing the questions which were this day asked Mr. Mole, the active and intelligent governor of the prison, by Mr. Becher, and the replies which he made to them.

1. When was the tread-mill established?—December 23, 1822.
2. What number of men have been employed on an average?—Daily average, from December 23, 1822, to 17th September, 1823, both days inclusive, $44\frac{183}{232}$.
3. What number of men are this day employed?—Fifty.
4. What complaints have been made to you by any prisoner employed in this mode of discipline?—None; not a single complaint.
5. What accidents have happened to the men, and what to the machinery?—One man had his foot slightly bruised, but this occurred through his own wilful neglect in coming off the wheel. No accident has happened to the machinery.
6. At what periods are the men relieved?—One man gets off the wheel every minute, allowing each never less than one-fourth rest, and occasionally nearly one-half, according to the number employed at each wheel: viz.—If twelve are employed at a wheel, nine are on the wheel, and three off, which gives one-fourth rest. If ten are employed at a wheel, seven are on the wheel, and three off, which gives near one-half rest; one man getting off, and one on, every minute.
7. In what periods do the wheels revolve?—Two of the wheels on the ground-floor make two revolutions in a minute; and the two wheels

on the upper floor make three revolutions while those on the ground-floor make four.

8. What is the rise of the steps?—Eight inches.

The dietary of the house of correction at Southwell cannot be considered as one of the highest class; but from which the prisoners on the wheel have received a sufficiency of nutriment to preserve the functions of the human machine in a state of healthful vigour. I have not found any necessity to increase the quantity or quality of the allowance, the dietary remaining the same as before the tread-wheel was established in this prison. This dietary consists of a loaf of coarse wheaten bread, weighing one pound and three quarters, and a pint of new milk to breakfast; one pint of oatmeal-gruel at noon, and the same in the evening; and a quarter of an ounce of salt per day. Awakened as the public mind has been to the subject of prison dietaries, by the parliamentary investigation which has lately taken place respecting the Milkbank Penitentiary, I may perhaps be permitted, after an experience of twenty-eight years, to make some professional remarks upon this subject. I find it stated in the "Rules for the Government of Gaols," published by the Society for the Improvement of Prison Discipline:—"N. B. One pound and a half of good wheaten bread, and a quart of gruel or soup daily, or a ration equivalent to this, is considered quite sufficient for the maintenance of a prisoner employed in ordinary labour," (p. 41;) and Mr. Webbe, surgeon of the house of correction in Cold-bath Fields, affirms that half a pound of solid flesh every other day, with good animal soup in the intermediate day, besides a sufficiency of bread and other farinaceous food, is necessary; as, without this increased diet, the workers on the tread-wheel would be soon in the situation of the convicts at the Milkbank Penitentiary. My practical knowledge is at direct variance with both these dietaries; for I pronounce our present dietary sufficient for any employment that can be exercised within the walls of a prison, having adequately sustained the prisoners upon it while they were excavating the foundations of the tread-mill in a treacherous soil, and digging and wheeling from a depth fifteen feet beneath the surface of the ground, as well as in other laborious occupations. Collecting my information from other gaols, when originally directed to determine the dietary, I proposed daily one pound and three quarters of coarse wheaten bread, half a pint of gruel at breakfast, and one pound of boiled potatoes to dinner. Not being satisfied with the general state of health, I recommended the addition of half a pint of gruel before retiring to rest. Finding an improvement in the scale of health, though not completely corresponding with my wishes, and apprehending that a diet strictly farinaceous, like that then

in use, would admit of considerable improvement by introducing a substance partaking in some measure of the properties of animal food, I advised the substitution of one pint of milk daily instead of one pound of potatoes; and it is gratifying to announce that the result has been completely satisfactory, and that I am enabled to state my conviction of its sufficiency both for the purposes of labour and of general health,—not as a theoretical surmise, but as an indisputable fact falling within my knowledge, in discharging the duties of my official situation. As surgeon of the establishment, the visiting justices allow me a discretionary power of improving the scale of diet according to the exigencies of particular cases; which power I, of course, find an almost daily occasion to exercise among the patients sent to the infirmary: it has never occurred, however, in a single instance, that an improved diet has been rendered necessary from any excessive fatigue, or from any morbid derangement produced by the exercise of the tread-wheel.

In opposition to the assertion that the labour and mischiefs of this machine exceed that of any invention which has hitherto undergone the test of experience, Mr. Mole, the governor, on questioning a prisoner in the presence of Mr. Becher, whether he would prefer breaking flax with the patent machine to the labour of the tread-wheel, gave a decided preference to the wheel, in consequence of the labour of the latter being so much less fatiguing than that of the former. Dr. Good's question respecting the employment of female prisoners on the tread-wheel at Southwell, is answered in the negative; female delinquents never having been ordered, at present, by the visiting justices, to be subjected to this punishment.

In reference now to Sir J. Cox Hippisley's correspondence, pages 11, 12, 13, and 14, I beg to state that his former objections to the use of the tread-wheel, (which I shall briefly recapitulate,) are completely and in the most satisfactory manner contradicted by the personal communications of between twenty and thirty prisoners, who had been labouring for different periods at the tread-wheel. These objections consisted "in the treading on tiptoe up an endless hill with the body bent forward, and with the hands rigidly and unremittingly grasping a rail for support; that, in consequence hereof, a most distressing thirst, debilitating perspiration, and *actual loss of flesh*, are often produced. That not only severe exhaustion, but strains upon the organs and muscles immediately called into exercise, in many cases highly injurious to health, have actually taken place on various occasions, and, in the opinion of a large body of physicians and surgeons of the highest rank and respectability, who have minutely examined into the subject, are necessarily threatened at all times. That the concurrent testimony of nu-

merous medical practitioners, of high character and extensive experience, has proved that habitual labour of a like description, as that of mariners, and even of a lighter kind, as the ladder treading in thatching, and among masons, labourers, miners, &c. has a gradual tendency to produce ruptures and varicose veins, or nodulous tumours on the legs; and in numerous instances has produced them. Whence it has been reasonably apprehended by other practitioners, of great talents and attainments, who have particularly attended to this machine and its effects, that a stated and longer employment upon it than has hitherto been experimented in any prison, in consequence of its being of novel introduction, will necessarily give a still greater tendency to the same injuries; and, in the end, more certainly and more extensively induce them among those who are sentenced to its morbid discipline. That, for these and similar reasons, the unhappy culprits have a horror of the mill, and would sooner undergo, as they all declare, any fatigue, or suffer any deprivation, than return to the house of correction, when once released."

In Dr. Good's letter to Sir J. Cox Hippisley, page 26 and 27 of the same volume of "Correspondence and Communications," are the following observations:

"From the tortuous attitude and uneasy motion manifestly displayed in mounting the endless hill of this mighty cylinder, upon the toes alone, with the hands fixed rigidly on the horizontal bar, and the body bent forward to lay hold of it, I could not but conclude, not only that the prisoner is hereby deprived of all the healthful advantage of athletic exercise, but must be fatigued from the outset, and perpetually in danger of the cramp, breaking the Achilles tendon, and forming aneurismal and varicose swellings of the legs; and that, if females were to be worked at the wheel, the same common cause of irksome and distressing exertion operating on the loins and many of the abdominal muscles, must, of necessity, in various instances, accelerate the period of menstruation; and, even where it does not force it forward before its proper time, render it excessive, and lay a foundation for many of the most serious chronic maladies with which the female structure can be afflicted. In the Cold-bath Fields prison, I found, upon close inquiry, that the prisoners frequently complained of stiffness and numbness in their hands, of pains in their loins and their legs; and that they were thrown into a profuse perspiration, and so completely exhausted in the course of a single round, or quarter of an hour's task-work, as to induce them to drink very largely of cold water as soon as the fifteen minutes were completed, although it is calculated that this up-hill exercise does not exceed the average of two miles in six hours, and consequently does not amount to half a quarter of a mile in the course of the fifteen minutes to which the task-time extends; evidently proving that it is the *nature* of the labour, its quality, and not its quantity, that occasions such violent effects, and constitutes the terror with which the tread-wheel is con-

templated. I do not know that any of these maladies, which, from the recent use of the wheel, could not be of long standing, had produced any ill effects upon the constitution of the prisoners, or permanently undermined their health."

In page 32 of the same volume, Dr. Good describes his visit to, and his observations on the operation of the tread-wheel, at the Cold-bath Fields prison; of which I must beg leave to present a brief copy.

"I inspected the men as they descended in rotation from the wheel, at the end of the quarter of an hour's task-work, and made room for fresh relays. Every one of them was perspiring, some in a dripping sweat. On asking them separately, and at a distance from each other, where was the chief stress of labour, they stated in succession, and without the least variation, that they suffered great pain in the calf of the leg, and in the ham; whilst most of them, though not all, complained of distress also in the instep. On examining the bottom of their shoes, it was manifest that the line of tread had not extended farther than from the extremity of the toes to about one-third of the bottom of the foot; for in several instances the shoes were new, and between this line and the heel altogether unsoiled: a fact, however, that was as obvious from the position of the foot while at work, as from the appearance of the shoe at rest. Several of the workers seemed to aim at supporting their weight by bringing the heel into action, the feet being twisted outwards; and, on inquiring why this was not oftener accomplished, the reply was, that, though they could gain a little in this way, it was with so painful a stress of the knees, that they could only try at it occasionally. The palms of their hands, in consequence of holding tight to the rail, were in every instance hardened, in many horny, in some blistered and discharging water. The keeper, who accompanied us, admitted the truth of all these statements, and added, that it was the ordinary result of the labour! and that use did not seem to render it less severe: for those who had been confined long appeared to suffer nearly, or altogether, as much as those who were new to the work; thus confirming a remark I long since took the liberty of making to you: I mean that, when an organ is directed to any kind of labour for which it is not naturally intended, no perseverance will ever give it facility of action, or take off the original distress."

I have taken the liberty of making these copious extracts from Sir J. Cox Hippisley's volume, under the impression that the book is not in the hands of the majority of the readers of your Journal, and who would be unable to form a proper or just estimate of the arguments on each side of the subject, without some assistance of this description. My labour of refutation will be rendered very easy and compressed, by transcribing, in the first place, a letter published in the "John Bull" newspaper, of September 14th, from Mr. Jackson, the very intelligent surgeon of the Guildford house of correction; followed by the result of an examination of between twenty and thirty of the

prisoners in the Southwell house of correction, just taken from the wheel.

"TO JOHN BULL.

"Sir,—I read, with no small degree of surprise, in your paper of the 24th of August, some observations relative to the use of the tread-mill, together with copious extracts from Sir J. Cox Hippisley's work, in which a truly horrible account is given of the sufferings of the prisoners in the house of correction at Cold-bath Fields. These observations and extracts are so completely at variance with the state of things as they exist in the house of correction at this place, (Guildford,) more especially with regard to the effects of the wheel on the female prisoners, that I am induced to trouble you with an account of the weight of all the women who have been admitted into this prison between the 1st of May and the 1st of September; by which statement I trust I shall be able to show that, if increase of weight be a proof of improved health, the women are in better case than when they were admitted."

[Here follows a statement of seventeen female prisoners, all of whom, with the exception of three, had gained, in the course of four months, several pounds in weight.]

"By this statement you will perceive that, with very few exceptions, the women have gained considerably in weight; and, of those who have lost weight, two were labouring under disease at the time of admission, on which account they were seldom put upon the wheel. I beg leave to add, that I have witnessed some of the bad effects of the wheel on the hands of the female prisoners, as mentioned in Sir J. Cox Hippisley's work: and, in regard to the dreadful consequences described by Dr. Mason Good, as *likely to result* from the labour of females on the tread-mill, I most positively declare that no such consequences have existed here. The prisoners, and more especially the women, are in good health. The few cases of sickness which have come under my care, have generally been chronic cases of long standing, and were so at the time of admission into this place; and I do most solemnly declare that I have, as yet, witnessed no bad effects on the legs, arms, or bodies, of the prisoners from the use of the tread-mill.

"My object in troubling you with this is to elicit the truth, and to do away what appears to me, judging from its effects in this place, a groundless objection to a humane, useful, and harmless instrument of punishment. If the above be deemed worthy of a place in your paper, you will oblige me by inserting it. I am Sir, your obedient servant,

"EDWARD JACKSON,

"*Surgeon to the House of Correction at Guildford.*"

"*September* 2*d*, 1823."

"P. S.—On visiting the prison this day, I found that the mill was not at work, on account of the want of corn: the men were in their different airing wards; and the women all employed in needle-work, at which they appeared to be very expert, not one of them complaining of horny or blistered hands."

The same number of "John Bull" contains a letter addressed to the "editor of the London Medical and Physical Journal," from Sir J. Cox Hippisley, with some remarks on my former communication to you on the subject of the tread-wheel. Sir John appears to retain his former sentiments and antipathies, without, however, producing any new arguments in any way bearing upon the point in question, or in the slightest degree weakening the force of facts so formidably arrayed in opposition to delusive hypothesis and vague conjecture.

I shall now beg leave to state the result of the examination before alluded to at the Southwell house of correction, in full confirmation of the opinions I have so frequently offered. In this examination, I was most kindly and ably assisted by the Rev. John Thomas Becher, one of the visiting justices of this prison, and in the presence of Mr. Mole, the governor. The prisoners were distinctly informed that this examination would operate neither to their advantage nor detriment.

Names.	*Number of Months or Weeks on the Wheel.*	*General Observations.*
Wm. Paton,	10 months,	His knees, legs, and thighs, fatigued in an evening. No swellings in his legs, nor cramps. Walks with the greatest ease when fronting the wheel. The labour not greater than that of a common day-labourer.
William Allen,	5 months,	No pains nor swellings of any kind. Could step laterally on the wheel the whole day, but eases himself by changing his position.
J. Staniland,	9 months,	Can walk laterally the whole day; or either in front or to the back of the wheel. No pains of any sort.
G. Cullen,	9 months,	Treads in front with the greatest ease, but often changes his position; can walk backwards. Has no pains nor swellings.
W. Clewes,	9 months,	Walks fronting the wheel the easiest; can also walk sideways and backward.
J. Abbott,	5 months,	Treads in front with the greatest ease. No pains.
J. Hall,	5 months,	Treads easiest laterally, and could tread the wheel in that position the whole day.
W. Calton,	3 months,	Treads laterally, backwards and forwards. Complains of no pains, but of weariness in the evening. Sleeps well.
J. Kirk,	5 months,	Treads laterally the easiest. No pains in his knees, nor weariness at night.
J. Northway,	3 weeks,	Treads fronting the wheel. No pains, but wearied in an evening.
W. Simpson,	6 weeks,	Treads laterally with the most ease. No pains.
T. Wheely,	6 weeks,	Laterally the whole day. Has been a soldier, and experiences the same fatigue as produced by a walking drill, but not so severe as a balance step. The exercise not so severe after he had been used to it. No pains.
Thomas Northwainer	6 weeks,	Agrees with the above. Compares it to the balance step, and the pains go off after rest. No pains.
J. Slack,	6 weeks,	Treads the easiest in a lateral direction; can also tread backwards. No pains.

Names.	*Number of Months or Weeks on the Wheel.*	*General Observations.*
W. Hatter,	6 weeks,	Does not think the exercise of the tread-wheel so severe as that of the walking drill. Treads the easiest on the front, and has no pains nor swellings.
Wm. Torr,	6 weeks,	Treads laterally the easiest. Labour somewhat like the balance step, but more fatiguing. A feeble man.
R. Burns,	6 months,	Treads easiest by changing his position. Not so laborious an employment as thrashing in a barn. No pains, swellings, nor much fatigue.
W. Wigley,	3 months,	Treads fronting the wheel more easily than laterally, but can do either. The labour not so severe as getting iron-stone. No pains.
J. Bliton,	3 months,	Treads laterally, in front, or in any direction, but prefers facing the wheel. No complaints of any kind, excepting fatigue in the evening.
J. Wilkinson,	4 months,	The lateral tread is preferred. Without pain or complaint.
J. Orridge,	5 months,	Treads easiest facing the wheel, but has an advantage in a change of position. No complaints of pain nor of swelling, but of great fatigue in an evening.
W. Omfield,	6 months,	The lateral position the easiest, and says that the labour is about as severe as that of sawing. He has varicose veins in his legs; but had them previous to labouring on the wheel, or being committed to this prison.
J. Hallam,	11 months,	The lateral position the easiest, and has no swellings nor pains.
T. Cliff,	11 months,	Can tread in almost any direction. Complains of fatigue from the exercise; but has suffered neither permanent pains, swellings, nor any deprivation of rest or appetite.

However diffident I may feel respecting my own judgment, I stand on this occasion supported by the concurrent opinion of those accustomed to minute and accurate investigation. After the twenty-four prisoners, whose depositions are here given, had been individually examined by Mr. Becher, without any previous knowledge of the purpose for which they were brought before him, and had, by their unanimous testimony, produced a confirmation of my original statement, twenty-six fellow prisoners, who were also employed upon the tread-wheel, were summoned; and, the whole fifty being collected, were desired to state, without intimidation, whether they experienced any disorder, or any other sensations than those which are common to the soldier at his drill, the mechanic at his shop, or the labourer in his barn? The result was, that every man, exercising what is denominated a laborious occupation, had frequently sustained, from a continuance, much severer and more distressing employment; that the sensations and pains were nearly allied to those succeeding a drill, especially at the balance step; and that the frame-work knitters and lace manufacturers of this county, who exercise an art requiring a peculiar flexibility of

muscle and an extreme delicacy of touch, were not in the slightest degree prevented from resuming their usual employments after their discharge from the tread-mill.

Mr. Mole, the governor, I may take the liberty of mentioning, is a man of indefatigable vigilance and acknowledged humanity: his whole time is devoted to the duties of his office; the prisoners, while on the tread-wheel, are always immediately before his window. He was originally bred at Birmingham to the manufacture of arms; after which he served as a lieutenant in the 32d regiment for several years, with very considerable reputation. On leaving the army, he resumed the superintendance of a large manufactory at Birmingham; and I leave it for the public to determine whether such a person is likely to be deceived in matters submitted to his daily and hourly inspection; and whether his duty to the magistrates, as well as his own sentiments of justice and humanity, would not have impelled him long since to have made a formal representation, if all or any of the evils ascribed to this machine had existed within our prisons? With less circumspection in conducting the examination of the prisoners, it is neither impossible nor improbable that the hopes of reverting to that idleness which has disgraced our prisons, and drawn such multitudes within their walls, might have proved a powerful inducement to attempt delusion by representation arising rather from interested motives than from actual suffering.

The question of the utility or of the injurious tendency of the tread-wheel being, in my opinion, satisfactorily determined by the testimonies offered in the preceding pages, as well as by the concurrent opinions in its favour of the respectable medical gentlemen, whose sentiments on this subject have been publicly and most impartially given, I shall beg permission to state the enviable degree of health which has been obtained at the Southwell house of correction, by the excellent system of ventilation, cleanliness, and general good management, adopted and enforced by the visiting justices of that prison. I will first mention that one death only has occurred during the last five years, —Robert Smith, who entered the house of correction with symptoms of confirmed phthisis pulmonalis. So far, indeed, had structural disorganization advanced on his commitment, that he lived only a few days after his admission. The gross number of prisoners committed during that period (five years,) amounted to 3227; and the average number of prisoners daily confined for the last year, commencing 25th of June, 1822, and ending 24th of June, 1823, both of the above dates inclusive, amounted to $81\frac{238}{365}$. The number on the sick-list at this time is fourteen: many of these cases are of minor importance, and not one of them depending either on the effects of the tread-wheel or of incarceration.

Case of Trismus, &c. approaching to Tetanus, supervening to a lacerated Wound, successfully treated by Acupuncturation. By FREDERICK FINCH, Esq. Greenwich, Member of the Royal College of Surgeons, London.

(From the London Medical Repository for November, 1823.)

THE frequent opportunities I have had of witnessing the manifest benefit acupuncturation has afforded in rheumatic patients, by producing almost instantaneous relief, particularly in those cases where there was rigidity of the muscles, induced me to entertain an opinion that acupuncturation might be efficacious in the alleviation of tetanus, and I determined to avail myself of the first opportunity to make trial of it in that disease.

In the course of the last month, a highly respectable neighbouring practitioner (Mr. Bromley, of Deptford,) informed me that he was attending a patient who had fallen from a considerable height, and had received several extensive lacerated wounds on various parts of the body and scalp, and that he despaired of his recovery, in consequence of trismus, &c. having taken place, and destroyed all power of deglutition. I intimated to Mr. Bromley that, if the case were mine, I should try the effect of acupuncturation, and was permitted to accompany him to the patient's house. The patient was in a most distressing situation, with a pulse of 130; the jaw completely locked; and, from the extreme rigidity of the muscles about the throat, he was incapable of swallowing the smallest quantity of fluid.

Having obtained permission to employ the needles, I introduced one into the masseter muscle of the right side, and was much gratified to find that muscle, as well as the sternocleidomastoideus, platysma myoides, and all the muscles of the neck and throat of that side, instantaneously relieved from their spasmodic contraction. Another needle was then introduced into the left masseter, and relief (though not to the same extent) was immediately afforded. Such was the effect of the operation, that before we left the room the patient took a large dose of tinct. opii and a cup of chocolate, although he had been unable to swallow any thing for some considerable time before. He is now perfectly recovered.

It would be too much to assert that the same means would in every case be attended with the same fortunate effects; but in such a dangerous and fatal malady, even a distant approach to a successful remedy may lead to important discoveries, which may be promoted by inserting this case in the pages of the Repository.

Greenwich, 14th October, 1823.

On Croton Oil. By Dr. KINGLAKE.

(From the London Medical and Physical Journal for November, 1823.)

THIS oil is obtained by expression from the seeds of a plant termed *croton tiglium*, a native of the Island of Ceylon, and found in China, the Molucca islands, and in various parts of the East Indies. The inhabitants of the different countries in which it spontaneously grows have immemorially regarded every part of the plant, root, stalk, and leaves, as well as the seed, as violently cathartic, and have occasionally used them in that intention in cases of obstinate constipation. The acrid principle, on which the cathartic power of the plant depends, resides in its resinous part, which forms a large portion of its general bulk. This highly stimulant material pervades its whole structure, but seems to be chiefly concentrated in the seminal product.

From the seeds of this plant the croton oil in moderate use is obtained. It is perhaps the most commodious and efficient form in which the medicinal powers of this vegetative production could be administered. The seeds have been long known in Europe, under the name of *grana Molucca* and *grana tiglia*, and have been given, either dried and reduced to powder, or in the moist state conjoined with honey, in the form of pill, to the extent of one grain, in cases requiring prompt and active excitement of the peristaltic power of the intestines.

Nearly one half of the whole bulk of croton oil has been ascertained to consist of an acrid principle, which, if undiluted, and not in some measure obtunded by the oily vehicle forming the other part, would probably be much too subtle and impressive in its influence on vital organization, to admit of being safely employed. It would, perhaps, by a divellent agency, instantly decompose the organic structure from which vital power emanates, and, by this destructive operation, prove the most active of all known poisons. It would therefore not be desirable to detach this extremely acrid substance from the oily envelop by which it is prevented from exerting the full extent of its virulent power.

All cathartic substances, in common with other descriptions of medicinal stimulants, derive their efficient properties from an arrangement of matter somewhat similar to that which is inherent in croton oil. The main difference consists in the degree of concentration in which the active principle exists. Substances operating moderately on the peristaltic power of the bowels have the active principle so widely diffused in the texture in which it resides, as not to allow of much union or aggregation of power. Elaterium, colocynth, aloes, gamboge,

and buckthorn, approach to the condensed strength of croton oil, but are still very inferior to it in effective power.

It is certainly a desideratum to have an agent like croton oil, to which a last resort may be made in cases of great emergency, with a prospect of obtaining the relief that could not be effected by any other known means, and without which death would inevitably ensue. Valuable as this resource may be in cases of insuperable difficulty by the usual modes of affording aid, yet due caution should be observed in exhibiting an agent that would seem, by its stupendous powers, to be fraught with the issues of life and death. The power that could be rapidly efficient in circumstances in which no assistance could be derived from means ordinarily found to be fully adequate to all that could be desired, exerts an energy of action that may be either salutary or destructive. If it should disorganize, it cannot prove remedial, and the limit between such an effect and the desired relief is so precariously uncertain as to render the result extremely ambiguous. The indication, then, for the use of such a potent agent as croton oil can only be furnished by ample proof of the insufficiency of those medicines which generally produce the required effect without any attending risk, or cause for apprehending any disastrous influence.

The reputation of a third or half part of a drop of croton oil being a sufficient dose where the most powerful cathartic medicines had been previously resisted, always suggested to my apprehension that its agency would be of a nature rather to extinguish the sinking energies of life, than to excite them to salutary action. It is probable that the torpid and much exhausted state of vital power in the cases in which croton oil has been employed, is the negative condition that ensures its beneficial effect, and protects against its pernicious operation.

Would croton oil act safely on an unembarrassed and unexhausted state of vital power, such as occurs in the villous coat of the stomach and intestines in common instances of constipation? The pain that is usually endured in intestinal obstruction, and the unavailingly stimulant remedies commonly given on those occasions, reduce vital energy to a low ebb, which probably enables it to bear the high exciting agency of croton oil, not only with impunity, but with the cathartic effect that procures the desired relief. If croton oil, therefore, like spirit of turpentine, be had recourse to in cases of intestinal obstruction after other powerful means have failed, and sufficiently early to obtain evacuations before gangrene may be induced, it promises to prove a most important addition to the list of efficient medicines in one of the most deplorable ailments incident to human nature.

An opportunity has been very lately afforded me of subject-

ing the cathartic power of croton oil to the test of experiment, in two instances in the same patient. On the first occasion, hepatic derangement occurred, attended with a severity of pain that denoted a distended and obstructed state of the biliary ducts by concreted or inspissated bile. The first passages were soon involved in the disturbance, inducing vomiting and a torpid condition of the peristaltic power of the intestines, that resisted, during upwards of two days and nights, the most efficient remedies usually employed in these cases. Terebinthinate clysters, mercurial, aloetic, and other cathartic medicines, were exhibited in large doses at short intervals, but without making the slightest impression on the existing constipation. The general strength began at length to give way, and symptoms of destructive exhaustion, or rather of gangrene, became apparent, and placed the patient's life in the most imminent danger. Under these circumstances, the attending surgeon, Mr. Lidden, of this town, at my suggestion, administered croton oil, in the dose of one drop conjoined with three grains of extract of colocynth, in the form of pill. It was proposed to repeat the dose every hour, until some decisive effect should be produced. The first dose was retained, and excited rumbling in the bowels, but no evacuation within the hour. A second dose was then given, which operated within half an hour most copiously. Neither nausea, pain, nor any sensible inconvenience, attended its energetic action. It proved the happy means of removing a very large quantity of dark-looking, fetid, and scybalous substances, from the bowels. The relief afforded was immediate and complete; all pain, sickness, and vomiting, speedily subsided. Diluting and dietetic articles were afterwards retained on the stomach, and the patient remained for about three or four days free from complaint. After the lapse of that time, hepatic pain and inactive bowels recurred. Common remedies were again found to be unavailing; the croton oil was therefore resumed, in a similar dose to that in which it had been before given. The first drop in this instance produced very fully the desired effect, within half an hour of its being taken. Since that time the patient gradually recovered, the bowels for the most part resuming their natural action, and admitting of being occasionally moved by slight aperient medicines, such as castor oil, magnesia, or rhubarb.

Were these instances of the efficacy of croton oil characteristic of the uniform power of the remedy, it would deserve to be hailed as a medicine, in such circumstances, of inappreciable worth. To afford all the aid that could be desired in the last extremity of the most hopeless constipation, is an extent of relief that cannot be sufficiently estimated. It is precisely the

sort of assistance that is often required, and without which death must inevitably ensue.

It has been my happy lot to experience the high gratification of rescuing two patients from imminent peril of death, by the cathartic power of spirit of turpentine. Like croton oil, the spirit of turpentine restrained the inverted action of the stomach and bowels, that caused every thing that was swallowed previously to its being taken to be speedily rejected by vomiting. This desirable and auxiliary contribution to its final efficacy seems to be similarly effected by both articles, by strongly exciting and energizing the peristaltic power, so as to enable it to exert sufficient contractile force to transmit and expel from the intestines the obstructed substances that could not be removed by any other known agents.

Croton oil, from the smallness of the dose in which it is efficient, and the flavourless concealment with which it may be given, in the form of either pill or bolus, is preferable to spirit of turpentine, if its remedial effects in obstinate constipation be fully equal to those of that article. It is, however, an advantage to have two such potent agents at hand, supplying an alternative, if either should fail in procuring the necessary evacuation.

Croton oil seems to act expeditiously and commodiously in the form of pill. It may be made into that shape with either crumb of bread, honey, conserve of roses, extract of hyoscyamus, that of colocynth, jalap, or any other similar vehicle. As the concentrated strength of the oil in the dose of one drop is well borne on the stomach, without inducing either a sense of excessive heat, sickness, or pain, it is probably the most efficient and advantageous form of administering it. Were it to be more diluted by being mixed with an aqueous or any other fluid, its power would, perhaps, be too much attenuated to enable it to act with the promptitude, that may prevent the nauseating and other inconveniences that would be likely to result from a slower and less decided exertion of its cathartic power. Swallowed as an oleo saccharum, by gradual solution, it has operated speedily and without molestation.

Although it may be expedient first to try, in all instances of obstructed bowels, the effect of common purgatives, yet it would not be advisable to delay the more efficient aid that may be derived from either croton oil or spirit of turpentine for an indefinite period, lest gangrene should supervene, which would render the evacuating power of either of these remedies unavailing. In hernial obstruction of the intestinal canal, the attempt to replace the prolapsed portion of the bowel within its natural cavity is too often fruitlessly protracted, until sphacelus

has been produced, after which the operation of dilating the abdominal ring by incision can afford no benefit. In these cases, the effectual relief derivable from a seasonable use of the knife should not be postponed until irremediable mischief has been incurred; nor should the powerful influence of croton oil and spirit of turpentine, when necessary, be deferred until the vital power of the intestines be too much sunk and disorganized to admit of being salutarily excited.

Taunton, June 6th, 1823.

P. S.—Since writing the above observations on the medicinal effects of croton oil, a case of a very extraordinary and instructive description of obstructed intestines has fallen under my professional notice, in which that powerful cathartic ultimately succeeded. The patient was a female, aged about twenty-five, who had long been habitually subject to constipated bowels, arising from dyspeptic and other causes, inducing an atonic and torpid state of the alimentary canal. In the instance referred to, the customary costiveness became unyieldingly obstinate. The various cathartic medicines that are in general actively efficient were, during three days, unavailingly given. Clysters, likewise, of the most stimulating and powerful kind, were added to the medicinal attempt to produce on the peristaltic power a transmitting or purgative action. Croton oil, to the extent of one drop every hour, in three successive instances, had been fruitlessly taken. In common with all other cathartic remedies, each dose was rejected from the stomach within an hour after it was swallowed. At this period my attendance was desired in consultation, when it was determined that the croton oil, as holding a decided precedence as a rapid and powerful purgative, should be repeated every hour until either the desired effect should be produced, or an objection to its continuance, on the score of its being insufferably stimulating, should arise.

Pursuant to this arrangement, two additional doses were given of two drops each, at intervals of one hour; but the nausea, vomiting, and pain, that ensued, having been attributed to the inefficiency of the remedy, the patient could not be induced to persist in any further trial of its power. Three additional days, making altogether six, elapsed without evacuation from the bowels having been procured, during which time two ounces of rectified spirit of turpentine, and other powerful cathartic medicines, were administered, and the patient also diluted copiously with a saturated solution of phosphate of soda. At this period, every article that was swallowed was speedily rejected with great violence, accompanied with a sense of the most acute spasmodic pain about the obstructed

portion of the bowels. There was but little or no abdominal tension, and external pressure was borne without much inconvenience. The general arterial action was not much excited; the skin was open and steadily moderate in its temperature, and no chilliness or rigor occurred.

The patient appeared to be inexorably repugnant to all further medicinal attempts for relief, but was, however, at length prevailed on to swallow an ounce of quicksilver, which was done in two instances at intervals of one hour. A feeling of oppression followed this last remedy, but it did not at all pervade the obstructed part. This was the sixth day of the obstruction, without any relief having been effected. All medical attendance and endeavour to overcome the complaint were now absolutely prohibited; the persuasion of the patient, as well as the sympathy of surrounding friends, conceiving that any further attempt to relieve would not only be useless, but would aggravate the existing pain, and render the closing scene of life more afflicting. In this abandoned state, the patient resolutely continued until the twelfth day of the constipation, taking only a few drops of tincture of opium two or three times a-day, to lull pain, and to smooth, as was expressed, the road to dissolution. Accident afforded me an opportunity, on the eighth day of the constipation, and on the second after all medical aid had been peremptorily refused, to contrive the introduction of four drops of croton oil in the dose of opiate medicine that was, by the patient's own desire, taken at intervals. This quantity of the oil produced a searching kind of excitement throughout the intestines, that occasioned a decided objection to even repeating the opiate, lest the uneasy sensation should be increased by it. During three days a sense of violent forcing was experienced in the bowels, accompanied with occasional vomiting. At length, on the fourth day of this propulsive sensation, the obstruction gave way, and copious discharges of scybalous, dark-coloured, and extremely fetid substances ensued. The evacuations continued without medicine, at short intervals, during the ensuing twenty-four hours. The previous vomiting, pain, and every other diseased feeling, soon subsided; the patient became decidedly convalescent, and has since regained her former state of health.

The practical reflection that suggests itself in this singularly wayward case, is that the cathartic power of the croton oil was not steadily applied and exerted after it was commenced. The vomiting that ensued, and the additional pain that it seemed to have occasioned, were no sufficient objection to assiduously persisting in its use, knowing that symptoms of active inflammation were not produced, and that, if the intestinal canal were mechanically pervious, the desired effect would possibly, sooner

or later, result from its progressive influence. Intestinal obstruction from hernia, introsusception, and stricture obliterating the canal, oppose perhaps insuperable barriers to the powers, as well of croton oil, as of all other modes of medicinal aid; but the existence of such a state is always conjectural, and therefore can never be sufficiently evident to preclude the expediency of making attempts to overcome the obstacle to the utmost point of trial. If croton oil had been unremittedly given in suitable doses, and at proper intervals, when it was relinquished, the ultimate relief that was afforded by its desultory and unconnected use would probably have been produced at a much earlier period, and have exempted the patient from indescribable suffering, and the most imminent risk of a mortal issue. The four drops of the remedy that were by contrivance unconsciously conveyed into the first passages, through the medium of the opiate vehicle, succeeded in removing the obstruction after the lapse of four days from the time they were given. Had that dose been followed by another of an equal, or even less, power after a short interval, the eventual relief would most likely not have been so long delayed.

The case, on the whole, is highly interesting, in at once vindicating the cathartic power of croton oil from insufficiency, and demonstrating the error of ever abandoning obstructed bowels as irremediable, whilst the ability to swallow remains, and the evidence of existing gangrene is doubtful.

Another case of unyielding obstruction of the bowels was, so late as yesterday, placed under my professional direction, in which, after two days and nights had been consumed in unprofitably administering various powerful cathartic medicines at short intervals, one drop of croton oil, formed into a pill, with three grains of the compound extract of colocynth, removed the obstruction in the course of twenty minutes after it was swallowed. The direction was to repeat the dose every hour until the bowels should be freely moved; the discharge, therefore, having not been, in the estimation of the patient's attendants, sufficiently copious within an hour of the time of giving the first pill, a second, containing another drop of the oil, was taken, which was speedily followed by profuse evacuations. The relief derived from the cathartic operation of the croton oil was early, and, as usual, all that could be reasonably desired. No additional pain, that the patient could distinguish from that which was induced by the morbid obstruction, was experienced from the influence of the oil; the previous vomiting ceased, the tension of the abdomen became less, and the pain which had been felt on pressure was greatly diminished.

The patient was a house-painter, and had been occupied in that pursuit when the obstruction began, and became painful:

it may therefore be regarded as an instance of colica pictonum, and it appeared to be a case of a very severe and portentous description. Previously to taking the oil, all medicine, in common with every domestic article that was swallowed, was speedily rejected by vomiting. The oil was retained, and, by its peculiar efficiency on the contractile or peristaltic power of the intestines, rapidly removed the existing obstruction, and thereby obviated the fatal termination which imminently threatened the case, if seasonable aid had not been obtained.

Taunton, August 30th, 1823.

Selected Reviews.

Remarks on the Yellow Fever of the South and East Coasts of Spain; comprehending Observations made on the Spot, by actual Survey of Localities, and rigorous Examination of Fact, at original Sources of Information. By THOMAS O'HALLORAN, M. D. Member of the Medical Academies of Madrid and Barcelona.

(From the Medico-Chirurgical Review for September, 1823.)

THE investigation of epidemic and endemic fevers has, for several years past, been carried on with such ardour and acrimony, that a kind of reaction or revulsion has now taken place in the public mind, and these inquiries are looked on with some degree of horror. It is not proper, however, especially in the Journalist, to give way to these temporary vacillations of taste or temper. What has been interesting once will be interesting again; and therefore it is his duty to place on record a faithful account of what passes in his day, for the benefit of posterity, if not for the gratification of the moment. But that taste must be fastidious, that mind contracted, that disposition selfish, which can turn a deaf ear or uninquisitive eye to the theatre, however far removed from his own vicinity, where fever annually sweeps thousands to the grave. The causes which first produce endemics and epidemics, and the laws by which they are afterwards propagated, cannot be too much or too often examined—especially as they are yet involved in great obscurity. This is the paramount reason of our entering into the subject as often as it presents itself—but there are other reasons, though minor, which stimulate us to this task on the present occasion. The two individuals, our countrymen, who have lately investigated the fever of Spain, were actuated by the most disinterested zeal, and undertook the dangerous and laborious office at their own personal risk, and at their own

private expense—Government having granted little else than *permission* for the hazardous enterprize. To Drs. Jackson and O'Halloran, then, we affirm, the profession is under a debt, which ought to be repaid by at least an attentive perusal of their works. It is only by the zeal and intelligence of its individual members that the respectability of the profession itself can be sustained or promoted, and the examples of the two gentlemen in question deserve to be recorded in the most grateful manner, and held up as incitements to their brethren at large. Having made these few preliminary observations, we shall proceed to lay before our readers some account of Dr. O'Halloran's labours.

Dr. O'Halloran having spent some years in the West Indies, and there undergone, in his own person, a visitation of yellow fever—and having also served some time in North America, and at Gibraltar, he may be fairly allowed to be a proper person for the investigation in question. It will also be recollected by our readers that our author accompanied the venerable Dr. Jackson on a former occasion, and assisted in exploring the nature, causes, and treatment of the epidemic on another part of the Spanish coast.

The first chapter of the work contains a sketch of the medical topography of Barcelona and its environs, of which we deem it proper to take some notice. Catalonia, the province, is bounded on two sides by the Pyrennees and Mediterranean. Its mountains are high and rugged, and intercepted by deep ravines, through which torrents descend impetuously in the rainy season. The elevated country, not mountain, is a light barren soil. The plains are numerous, small, and fertile. The country is watered by several rivers, of which the Ebro is the largest. The country contiguous to Rosas is alluvial, swampy, and extremely insalubrious, the inhabitants being severely harassed by intractable, and often malignant, intermittents. To the eastward and northward of Barcelona there is no ostensible swamp, but water is found at all points there within three feet of the surface. The country to the *westward* of the city is watered by the Llobrigat river, and the principal part of the land contiguous to the river is swampy during the autumnal months, or rainy season, after which period it becomes partially dry, and admits of culture. The district adjacent to the mouth of the river, a mile in extent, "is actual swamp at all times."

"The noxious exhalations from this source not only produce disease among the peasantry, but the air of Monjui, a hill which overlooks Barcelona, is so deleterious in its qualities, as to render it necessary, on some occasions, to relieve the stationary guard every eight or ten days. The injurious impression of the exhalation arising from this swamp, manifests itself more conspicuously upon the sum-

mit than in the subjacent parts. Few escape disease who reside on the hill for any length of time; those who dwell on its skirts, or on the plain below, suffer little sickness comparatively, and experience little comparative mortality from their sickness; a fact proving, with a multitude of others, the superior force of the noxious influence of vapours, ascending from low, swampy grounds, to rocky and mountainous heights in their neighbourhood." P. 5.

This hill, which is 700 feet high, is not only useful in protecting the town and harbour from the enemy, but apparently in screening the town and environs from the unwholesome exhalations which arise from the swamp on the western side.

Barcelona itself, situated on a bed of sand, nearly level with the sea, covers a space of two miles and a half in circumference. The houses are generally from three to five stories high—some of the apartments being large, spacious, and well ventilated—the windows of the sitting rooms descending to the level of the floor, and consequently the air circulating freely. The sleeping rooms, however, are too often small, dark, dirty, and without any means of ventilation. The houses have generally areas in the centre, but too small for light or ventilation. The under floor or flat is seldom inhabited, and abounds with exhalable moisture.

"The streets are extremely narrow, being seldom broader than two, three, or four yards, crooked, and intersected by a number of lanes and alleys. The sides of the streets are well paved: there are shallow drains in the centre for the conveyance of filth and water from the houses. They are covered with massive pieces of rock, three feet long, and about eight inches broad, so arranged as to leave interstices for the passage of water from the houses, during the prevalence of the autumnal and winter rains. The unwholesome vapours, produced by the filth which stagnates in the sewer, exhale through the interstices, so as to offend the sense of smell at all seasons of the year. They excite the disgust of the inhabitants who are accustomed to them; they not unfrequently turn the stomach of strangers.

"Upon the whole, when the narrowness of the streets, the excessive filth in the dwelling houses, the extraordinary construction of the sewers in the centre of the streets, and the dampness of the under stories are fully considered, there can be no surprise that the endemic disease should be of an aggravated kind, and, under the influence of a contingent epidemic, that it should be malignant." P. 8.

In Barcelona and environs ague is the most common form of disease—remittents are not rare—continued or gastric fevers are frequent at certain seasons—"and a form of malady called typhus by some, and at present known by the name of yellow fever, has appeared at intervals from the commencement of the present century." In 1803 and 1819 it prevailed to some extent—the mortality was considerable, but the disease was not then considered as arising from pestilential contagion.

In Barceloneta, a small, but regularly built town in the vicinity, the houses touch on the back part, and consequently are very deficient in ventilation. The apartments are small, and the whole interior miserable, on account of the filth of the inhabitants. It is also built on an alluvial soil, abounding at all seasons of the year with exhalable moisture. In this place, as may be readily supposed, the mortality was greater in proportion than in other and better situations. Yet the servants of the hospital did not suffer here; for of fifteen persons who were constantly employed in the care of the sick, only one contracted the malady.

"At the extremity of the harbour, between Barcelona and Barceloneta, the principal sewers of the city deposit their disgusting contents; and, as several of them unite at this point, they form a stream, the water of which is black as ink. It runs in an open channel for the distance of one hundred and fifty yards, before it falls into the sea. The effluvia which arise from this canal are disagreeable in the extreme, at all seasons of the year; they were unusually so before and during the epidemic, the drought being unusually great and of long continuance. Some of the families in the vicinity were so annoyed by it, as to be induced to quit their houses, and repair to the country. Besides the loathsome condition of the part alluded to, and the disagreeable effects it occasioned, not only to the inhabitants of the houses in the immediate neighbourhood, but to persons who accidentally passed that way, the sea for years past has gradually retired from the walls, having previously deposited sand in considerable quantity. The deposition is partially a swamp at the present time, from which, during the prevalence of hot weather, very offensive vapours arise." P. 12.

In the vicinity of this, the entrance of the channel contained several condemned and half-rotten vessels, in a state of filthiness that nothing could surpass, and emitting a most offensive smell. From this account of the town, harbour and locality, it will not appear surprising that fevers of a complicated and dangerous nature should arise occasionally there, without preternatural or foreign influence. In the summer of 1821, the first case was said to have appeared on ship-board, but this is not proved by good evidence. Wherever it began, it soon ravaged like a pestilence all the districts of this beautiful suburb, destroying life beyond any thing previously known in Spain.

The climate of Catalonia is very changeable, and the predominant easterly winds are always charged with moisture. In spring and summer the winds are hot and oppressive—the thermometer generally ranging between 77° and 86°—the mercury has even been known to rise as high as 90°. In fact, they have complete tropical temperature for some months of the year, and with it visitations of tropical diseases.

The second chapter of this work is entitled—"Importation

of the Yellow Fever into Barcelona, in the Year 1821." The origin of yellow fever has occasioned much unprofitable discussion among the Spanish, as well as among our own physicians. Some of them consider it a disease of foreign origin imported through the medium of ships, clothes, or goods—others suppose it to be the endemic of the country, disfigured in its form through contingent causes, atmospheric or terrestrial.

The story of the Dolphin brig importing the yellow fever into Cadiz, in 1800, exhibits a remarkable illustration of the delusion which exists in Spain, and of the facility with which the credulous inhabitants of that country are imposed upon. This vessel sailed from the Havanna on the 26th of May, 1800; touched at Charleston, in South Carolina, on the 30th, and there embarked three sailors, the town being in perfect health. She sailed again on the 11th of June, and arrived at Cadiz on the 6th of July. Twelve sailors composed the crew, and there were 22 passengers. Dr. Carrow, a physician, was among the latter. Three sailors died on the passage, in consequence of which the board of health at Cadiz interdicted all communication with the shore, the *captain* of the vessel stating that the men died of yellow fever. Dr. Carrow, however, who attended these men, contradicted the assertion of the captain, and the whole of the passengers bore testimony in the same direction. Yet the opinion of the captain overruled that of the physician —consequently the importation of the disease was fixed on the Dolphin!

Each side of the question has its partizans in Spain; but the advocates for importation are most numerous, the voice of the people, and the policy of the government, being all on that side. The others, who doubt this doctrine, dare not dispute the popular and political creed. "The delusion is an article of faith—is grateful to the people—is maintained by the government for purposes—and those who have the pertinacity to oppose, or offer facts in refutation of opinions, if not legally punished, are viewed in the light of fools, and laughed at by the mass of the nation." Under such circumstances it would be vain to look for unbiassed arguments or discussions from the Spanish profession. We must therefore trust to the observations of unprejudiced spectators from our own or other countries.*

Previously to exhibiting a brief sketch of the Barcelona epidemic of 1821, our author prefixes some observations on the state of the weather, and the prevailing forms for the half year preceding the rise of that destructive malady. These we must

* After the Jesuitical conduct of the Court of France towards Spain, we can put little confidence in the *official* reports respecting the contagious character of the Spanish fever which have been published in Paris.

pass over, but the following short extract presents a kind of recapitulation.

"The extraordinary changeable state of the weather, the prevalence of diseases uncommon at other seasons, the severity of catarrhal, rheumatic, pneumonic, and other febrile affections, the numerous miscarriages, the sudden deaths of persons apparently in health, the suffocation of individuals who were exposed to mephitical vapours in the necessaries of the city, the sudden and inexplicable creation of some classes of animals, and the unaccountable destruction of others, were circumstances which foreboded an impending evil, which neither the ingenuity of man, nor any power which he has within his reach, could avert." P. 27.

The medical faculty could not correctly ascertain the precise period when the common endemic bilious remittent fever ceased, and the real epidemic began—no inconsiderable proof, as our author properly remarks, of the analogy which subsists between the two diseases. The first cases which appeared in 1821 passed unnoticed, but as the disease became aggravated, and when it was discovered that a formidable malady reigned in the place, then some of the physicians and most of the people were unwilling to acknowledge that a disease of such malignity could have its origin among them. A tale of importation, therefore, was conjured up, and the awful visitation was ascribed to intercourse with the infected subjects of shipping, &c. A Neapolitan sloop of war, from cruising in the Mediterranean—a brig from the Havanna—a vessel from Cadiz—two vessels from Mahon, and several craft in the harbour, from various points of the compass—these were pitched upon as the pestiferous agents in the epidemic! We need not accompany our author in his refutation of these ridiculous stories, as no rational physician in this country will give any ear to them.

"The authorities, perceiving the slow and gradual progress of the malady, and willing to make the public believe that it was wholly confined to the port, declared in the public papers, that they had it within their control, and consequently that it should be brought to obedience. The promise was bold, but not wise. Force of arms was of no avail; the disease started up in different parts of both towns, without a possibility of ascertaining from whence it came. The futility of guards became obvious; the troops were removed from the port, and the gates of the city were closed against the inhabitants of Barceloneta. After that was done, the malady spread with extraordinary rapidity in Barceloneta, and in that part of Barcelona which skirts the port: scarcely an individual escaped who was long exposed to the atmosphere of these localities; for there the morbific cause would seem to have been concentrated in a singular degree. From Barceloneta the disease marched in a westerly course through the centre of Barcelona, diminishing in activity as it proceeded out-

wards. It was finally lost before it reached the north-west extremity of the city; and, beyond a given limit, the epidemic character ceased, or only appeared by accident." P. 35.

Our author states, in the next few pages, the circumstances which lead to the rejection of the doctrine of importation. They are strong and numerous—and, as far as this fever is concerned at least, they are quite conclusive.

All the world has heard of the famous French commission sent by the Cabinet of the Tuilleries to the South of Spain—not to disprove contagion, it may be assumed, but to countenance the mask worn by the "Cordon Sanitaire." Messrs. Pariset, Bally, and Francois, in their report to the political chief of Catalonia, assert, 1st, that the fever was (of course) foreign or exotic of Spain, and imported into that country—2dly, that it was contagious, or capable of propagating itself afterwards, a quality that need hardly be questioned if it was capable of being carried across the Atlantic—3dly, that the disease was a perfect proteus, and therefore that it was impossible to lay down any plan of treatment. In short, they acknowledge that profuse *spontaneous* perspirations were the best kind of physic—and wisely conclude, that a good health police is infinitely preferable to the most excellent methods of treatment—"because in every country it is much better to have no sickness than good physicians." It is proper here to state that, in a private letter to a friend at Madrid, Dr. Pariset lets out the following curious piece of information:—"In fact, my beloved friend, *the malady is so inveterate and fatal, that there is no facility for the dissection of bodies, as one would desire, nor of remaining in the hospital the necessary time, in order to observe deliberately the disorder.*" What an acknowledgment from men who took upon themselves to solve such weighty questions!

"A ward was allotted for the French commissioners in the Seminario hospital, and adequate means of carrying into effect an effective system of treatment were afforded to them. They entered upon the task with eagerness, but not without using the precaution of covering themselves with oil-cloth dresses. This necessarily struck terror into the hearts of the sick, who naturally imagined that where such means of preservation were employed by the faculty, against the impressions of contagion, their own chances were almost desperate. The results of the practice of the French physicians were not successful; and the Spanish doctors now boast of one consolation, that, if they only cured one patient in ten, the French were still behind them; for there were, in fact, but very few recoveries in their wards.

"Under those circumstances, I cannot help expressing my astonishment at their effrontery, in making observations on the cure of a disease, which set their art at nought; and to which, in fact, they did not approach, except under circumstances which indicated that they

were under impressions which obscured their judgment, and paralyzed their faculties; it is not therefore surprising that the French commissioners were unsuccessful practitioners." P. 68.

As for the manifesto of the Spanish Medical Junto, ycleped "the Medical Commission of Carthagena," it is a tissue of equivocations and absurdities bearing intrinsic evidence that the commission scarcely believed a word of what they published! These said commissioners only visited the hospital *once*, and at the time the report was issued, no official investigation had been instituted to ascertain the correct history of facts! In short, the whole train of transactions, Spanish and French, is too well calculated to show how medical opinions have been subjugated by political despotism. Thank God, we are free to exercise our judgments without fear of ruling powers, and if we come to investigations with biases or prejudices, they are those of the individual, who would scorn to succumb to the dicta of political authorities.

The 3d chapter of the work before us contains "general observations on contagion," and we regret that we can give but a very limited view of these observations, as they are not very susceptible of analysis. Still we feel anxious to state some of the many important circumstances brought forward in this chapter.

It appears that the disease ravaged like a pestilence the cities of Barcelona and Tortosa, destroying thousands, without respect to age or sex;—while in the towns of Asco, Mequinenza, Malaga, Cadiz, Seville, and several other towns, its attacks were so limited as scarcely to deserve the name of epidemic. Now, our author argues thus:—

"Had the propagation of the malady depended upon specific contagion, or intercourse with the sick, the result, it is presumed, would have been pretty similar throughout the different towns in which the contagion appeared; for the most unlimited intercourse took place between the sick and healthy."* P. 71.

As in each of the towns in which the minor epidemics prevailed, between two and seven hundred persons died of the yellow fever—and as some thousands, at least, must have been exposed to the contagion, if it did exist, it must be granted, that if the malady was contracted by intercourse, or near approach,

* "The Spanish soldier of the present day is, probably, the most wretched object of the community. He is sometimes ill fed, ill paid, ill clothed, and not unfrequently destitute of the common means of support: he is always open to bribery. As admission is thus obtained to the bed-side of the sick, if it be desired, the preventive measure of the government is thus violated; and, as the lower orders of Spaniards evince a total indifference to the danger of visiting their sick friends, the most unlimited intercourse does or may take place. This is the fact: the orders to the sentinel are peremptory; they are disobeyed for a trifling sum of money."

the result ought to have been similar in all. The reverse was the case, apparently owing to some atmospheric or terrestrial difference.

"The disease was diffused rapidly in some; in others, where the cause existed in a minor degree, the friends and relations performed all the necessary offices for the sick, and attended carefully at their bed-sides: the children slept with their parents, the wives, regardless of danger, slept in the very beds with their husbands; yet, the individuals who were thus exposed to the impressions of contagion, if contagion existed in the case, were not injured by the communication, even under circumstances apparently favourable to the diffusion of contamination." P. 73.

In the city of Barcelona, where the disease appeared, for the first time, in the year 1821, and where the physicians were, to a man, prejudiced in favour of contagion, a rigid scrutiny was nevertheless made, not only in private houses and public establishments, but also in the adjacent villages, country-houses, and lazarettos.

"And when they were convinced as to its true nature, from the strong proofs which daily offered to their observation, they were too candid, liberal, and enlightened, not to forego their former prejudices; and, with the candour and magnanimity of men of science and knowledge, they have, with few exceptions, avowed to the world, that the doctrine of contagion, in so far as relates to the disease called yellow fever, is founded upon fiction." P. 74.

During this destructive epidemic every kind of traffic went on extensively between Barcelona and the different provincial towns—and yet all those towns and villages, with the exception of Tortosa, Asco, and Mequinenza, which are situated on the muddy banks of the river Ebro, at a distance of more than ninety miles from Barcelona, enjoyed absolute immunity from sickness.

"It is evident," says our author, "from what has been stated, that some other cause, besides contagion, must have been in action before the disease became epidemic; for, had the propagation depended upon specific contagion, all parts of the city of Barcelona would have been similarly affected: it is, on the contrary, known, that parts of it were healthy where no precautions were taken, and where no ostensible cause could be assigned for exemption; except that of distance from what appeared to be the focus of the cause, or by contingent protection from the force or free play of the pestilential atmosphere; which, having its origin in the eastern part, was obstructed and actually destroyed before it reached the north-west extremity of the city, where comparative good health prevailed. The almost absolute exemption of one part of the city from fever, under the circumstances described, proves that no contagion existed in the case, and that the epidemic cause was somewhat connected with the noxious vapours

arising from the depositions of filth in the port and surrounding parts, for there the disease prevailed to an extraordinary degree." P. 89.

Many remarkable circumstances are next stated by our author, affording strong reasons for concluding that the epidemic in question possessed little, if any, contagious character. We shall only have room to quote one of these circumstantial facts.

"The Casa Miserecordia, or House of Pity, is a building of considerable magnitude, situated in the immediate vicinity of the House of Charity, in the north-west extremity of Barcelona, in an apparently healthy situation. The building is low, but the apartments are spacious and well ventilated. It contained one hundred and fifty girls during the rage of the epidemic. The nuns who teach them are twenty-four in number. They maintain themselves by washing, ironing, and other similar modes of occupation. They employ women to traverse the city—from house to house, to procure needle-work, &c. These women went to all parts of the city; they communicated indiscriminately with the inhabitants; they were not affected by the disease; nor did the nuns or girls suffer by communicating with them." P. 93.

This, as Dr. O'Halloran observes, is a singular and a strong fact. For it certainly appears strange that a disease which was said to have been transported from the Havanna to Barcelona, and from Barcelona to other places, could not be introduced into the Miserecordia through such numerous channels of communication!

We cannot resist the desire to give the particulars of another, among the many instances of a nature similar to the foregoing.

The House of Correction, situated in the north-west extremity of the city, is a building well ventilated and with spacious and clean apartments. In this there were 100 females during the epidemic season. Nine of them were attacked with the reigning malady, and these were removed to the Seminario Hospital, where four of them died. The other five returned to the House of Correction, where they freely communicated with all the inmates, yet no more sickness ensued. This house was also visited by some of the female inhabitants of the city, who, through charity, brought eatables, &c. but no infection to the institution.

"It is unnecessary to multiply examples. Some hundreds may be produced to prove the noncontagious nature of the malady, more particularly in the country within the cordon, where the population was immense, owing to the emigrations from the city. I shall, however, briefly observe, that the course of the malady from north-east to south-west, the different degrees of force attending its action in the course

of its movements, its unusual destruction at what may be called the focus, during the whole of its continuance, the irregularity of its proceedings, jumping from point to point, and leaving intermediate places untouched; the diminished degrees of violence by which it was characterized as it proceeded towards the westward; its fatal and malignant nature in ill ventilated places; the exemption of parts of the city from its influence, where no precautions were taken; the sickening of persons who observed the strictest seclusion; the sudden impression of contaminated air on persons recently from the country, without communication with the inhabitants of the city; the greater exemption of nurses and other attendants on the sick from the disease, than those who were simply exposed to the contaminated air of sickly houses; the almost absolute exemption of washers of bedding, clothes, &c., which had recently been used by the sick; the circumstance of the attendants in the hospitals and lazarettos having generally escaped the impression of the malady; the impossibility of diffusing the disease in the country, where no epidemic cause existed; and, finally, the deaths of some hundreds of persons who communicated with Barcelona, and who sickened in the neighbouring villages and country houses, without a solitary instance of its affecting the most assiduous of the attendants, however circumstanced, are ascertained facts, and convincing proofs of the noncontagious nature of the yellow fever." P. 101.

We must pass over several chapters that follow, on the medical topography and fever of Tortosa, Malaga, Puerto de Santa Maria, Xeres, Lebrixa, San Lucar de Barromada, and Cadiz, as we cannot do justice to our author's laborious investigations within the limits of this article. In the tenth chapter on Cadiz and Gibraltar, Dr. O'Halloran has made some sharp criticisms on Dr. Pym, and indeed has taxed him with certain erroneous statements which it will be indispensably necessary for Dr. P. to notice, and explain if he can—more especially the statement in his (Dr. P.'s) book respecting the entire immunity which the inmates of the Dock-yard are said to have experienced in the year 1813, in consequence of cutting off all communication with the garrison and other parts of the rock. Dr. O'Halloran, in opposition to this, gives a list of eight deaths (from the fever we presume) which occurred in this secluded spot, out of a population of 170 souls, between the 18th September, and 23d December of the said year. A list of sixteen sick is also given, but the diseases are not specified. The charge is made against Dr. Pym with such gravity by our author, that the former cannot, we imagine, allow it to remain unnoticed.

In the "general remarks" which follow the 10th chapter, our author recapitulates most of the arguments, founded on the facts stated in the body of the work.

"From an impartial consideration of all the circumstances attending the epidemics of Spain, in the year 1821, the conclusion is, I think,

fairly deducible, that the disease was not, and is not occasioned by imported contagion; and that its origin cannot be attributed to the germ of a former epidemic, resuming original activity from the operation of a peculiar state of the atmosphere, without which it would remain dormant perhaps for ever." P. 177.

On the contrary, he thinks that, would the Spaniards permit themselves to draw conclusions from an accurate knowledge of the general laws of the epidemics of the Mediterranean coast of Spain, and from the nature, construction, and situation of the towns, the conclusion would be irresistible:—

"*Viz.* that warm south-east breezes, unusual drought, excessive heat, want of ventilation in the houses, exhalations from swamps, lakes, &c., and, above all, the malignant effluvia which arise from the decayed remains of putrid animal and vegetable matters, with which the majority of the seaport towns of Spain abound, and which in calm and sultry weather, particularly in hot and oppressive nights, render the air impure, and offensive to the sense of smell,—are the causes which essentially influence or increase the activity of what may be called the seminium of epidemic yellow fever." P. 180.

The eleventh chapter is entitled "dissections," which are eleven in number. They all exhibit the ravages of the fever on various organs and parts, demonstrating the inflammatory nature of the complaint, and the necessity of antiphlogistic measures. The following extract will prove interesting to our readers.

"There are two points, particularly, in the foregoing dissections, which claim the attention of the reader. They unequivocally prove the highly inflammatory nature of the malady, and the cause of its unusual destruction. I believe that the internal state of the eye has rarely been the subject of post mortem researches; and as I am of opinion, that its contents are more or less deranged by the effects of inflammation, when that organ is the seat of pain, accompanied with external redness: I also think, that the discovery is important, as proving to a demonstration the almost utter impossibility of removing the disease without the rigorous employment of the lancet, and other means of depletion.

"The state of the kidney, next to that of the eye, claims our attention. It is the general opinion, that this viscus is not liable to suffer from inflammation and its consequences in the yellow fever, even where suppression of urine is a fatal and prominent system for days. I have seen more than two hundred dissections, but I do not recollect having seen the kidney examined minutely, a single incision through the pelvis satisfied the examiner, who pronounced it healthy. In all the post mortem examinations which took place previous to my arrival at Barcelona, if I can credit the report of persons who assisted at them, little attention was paid to the kidney,—a single cut and no more. In my first four dissections I was equally careless with regard to its state, having been informed, that in no one instance did it exhibit

marks of disease, although suppression of urine was a prominent symptom in almost all the fatal cases. In the case of Maria Gouch, I accidently discovered abscesses: the existence of abscesses in the papillæ of the kidneys led to the examination of the ureters, which also contained pus. I cannot say that abscesses of the kidneys are common in the yellow fever of Andalusia, having only performed a few dissections there; but, as the symptoms of the disease in Barcelona (where I am disposed to think, from what I witnessed, that abscesses of the kidneys were common) bore considerable analogy to the inflammatory form of the Andalusian fever, I am inclined to believe that the same appearances exist, and will be found on dissection; and as it is a most important point, as connected with the treatment, to ascertain whether or not the suppression of urine arises from inflammation of the kidneys and its consequences, I must take the liberty of calling the particular attention of anatomists to this important subject. Every atom of the viscus ought to be examined; the abscesses are extremely small, and difficultly discovered. The liver in most cases exhibited unequivocal marks of recent disease, more so than I before witnessed. The post mortem examination of subjects, who die of the yellow fever, should take place as soon as possible; for the different organs, viscera, &c., more particularly those that have recently suffered from diseased action, undergo changes in a few hours, so as to become brown, black, and apparently gangrened, while the appearances of other parts, that were comparatively healthy, are also changed after a given time. I am disposed to think, that if the body be not examined in five hours after death, little information can be obtained of the actual state; and that this, in a great measure, accounts for the extensive gangrenous appearances which anatomists have described, and which, in my opinion, rarely take place during life as the effect of disease; but as the vitality of parts, upon which a prominent morbid action exercises its injurious influence, is more or less in a state of debility from the effects of inflammation, when dissolution takes place, they more readily undergo changes and assume gangrenous appearances than healthy parts. This may be proved by exposing the abdominal contents as soon as possible after death. Then the changes are evident; for the parts, which have suffered from recent disease, change colour and become black in a very short time, whilst those, that have sustained no injury, retain the natural colour for a much longer period." P. 203.

In concluding this article, we acknowledge that we have not been able to do that justice to Dr. O'Halloran's publication, which its own merits and the zeal and talents of its author deserved. We hope, however, that we have done enough to excite all those whom it may concern to consult with care the original work. We have no doubt that the able and worthy author will not be overlooked by the commander in chief or the heads of his own department.

A Short Treatise on Operative Surgery, describing the Principal Operations as they are practised in England and France, designed for the Use of Students in Operating on the Dead Body. By CHARLES AVERILL, *Surgeon, Cheltenham,* F. R. C. London. pp. 172, 12mo. Jackson, London, 1823.

(From the Quarterly Journal of Foreign Medicine and Surgery for Oct. 1823.)

IT is a bad rule to estimate a book by its size and price, as a manual may often contain more useful, and even more detailed information, than a ponderous quarto of wire-drawn paragraphs. We may instance the subject of Morbid Anatomy as treated by Baillie* and by Monro; or Cutaneous Diseases, by Bateman, and by Alibert; or still more to the point, the Dictionnaire de Medicine, and the Dictionnaire des Sciences Medicales. We do not mean, however, to beat about for a counterpart to Mr. Averill's modest and handy little work, but to come at once to the useful things which he has had the ingenuity to store up in a very small compass. It is most true that the art of performing the operations of surgery, can neither be learned by a mere spectator nor acquired by any prescribed rules, without actual and frequent practice. The ultimate benefits of any surgical operation, must, of necessity, depend greatly on the dexterity of the operator, and any failure from a deficiency in this respect, is not less disgraceful to him, than unfortunate for his patient. The importance therefore to the student, of actual practice on the dead body, cannot be too highly estimated. If the surgeons of France retain, in any respect, the superiority they were formerly acknowledged to possess over those of this country, it is as operators only; which can alone be accounted for, by the attention paid in the French Medical Schools, to the practice of operating on the dead. This branch of the science seems to be less insisted on, than might be wished or expected by most English students in the dissecting room. It is usually taught in this country as collateral to the courses of anatomical lectures, only a few of which are devoted to the subject. While the practical knowledge is chiefly obtained from cases furnished by the hospitals.

Mr. Averill, to remedy, in some degree, this glaring deficiency in our medical schools, has drawn up this excellent little work as a practical guide to students and young practitioners; and in order to give us, as far as he can, all the advantages possessed by our neighbours, he has carefully noted the novel modes of operation adopted in France, chiefly by M. Lisfranc of the Hospital of la Pitié, at present one of the most eminent operators in Paris. As the author had the advantage of studying under M.

* The lamented news of Dr. Baillie's death just reached us as this sheet was sent to press.

Lisfranc, and performing under his direction all the operations which he has described, either on the living or the dead subject, we think, we cannot give our readers any thing more interesting than an account of some of these.

Œsophagotomy.—When any foreign substance is lodged in the œsophagus that can neither be withdrawn by the fingers nor forceps, nor pushed onwards to the stomach by the probang, but continues to prevent deglutition, and by its pressure on the back part of the trachea or larynx threatens suffocation, an operation for its removal becomes requisite, which M. Lisfranc recommends to be thus performed.

The patient should be seated in a chair, with his head reclining backwards on the breast of an assistant; the operator placing himself in front, takes the scalpel or bistoury, and holding it like a pen, commences his incision on the inner border of the left sterno mastoid muscle, opposite the superior edge of the thyroid cartilage, and continues it down to the lower edge of the cricoid. An assistant now draws the carotid sheath to the outer edge of the wound, to secure it from the knife, while the operator, cutting carefully through the cellular tissue, exposes the œsophagus, where it inclines to the left side from behind the trachea. A canula with a grooved stilet, or the sonde à dard formed like a female catheter, but considerably longer, is to be passed by the mouth down the œsophagus, inclining its point to the left side, which causes it to be readily felt from the external wound. The stilet is now to be pushed forwards through the coats of the œosphagus, when the operator feels with his finger along its concave edge, to ascertain that no large arterial branch be situated on it, and then passes a bistoury into the groove, which directing it onwards opens the œsophagus. He now feels for the foreign substance, which is to be extracted by a pair of dressing forceps passed along his finger.

During the operation, an assistant should carefully sponge away the blood after each cut of the knife, and should any arterial branch be divided, though little hemorrhage followed, it should be immediately secured, or it would render the operation much more tedious and obscure. The edges of the wound are to be approximated and a light bandage applied. The patient is to be kept at rest and no nourishment given him by the mouth for a few days, but his strength must be kept up by nutritious clysters.

Removal of a Part of the Inferior Maxillary Bone.—This operation has been performed with complete success by M. Dupuytren, Surgeon to the Hotel Dieu in Paris: the whole of the chin was the part taken away. I am not certain as to the nature of the disease for which the operation was had recourse to; but it appears that it may be required for exostosis, necrosis, or

a cancerous affection of the bone. Each of these diseases would perhaps call for a slight variety in the operation, according to the circumstances of the case.—(*See below in our Encycl.*)

The following is the method in which M. Lisfranc recommends it to be practised on the dead subject.

The body being placed on its back, with its head lowered and chin elevated, an assistant takes hold of one side of the lower lip between his thumb and fore-finger, while the operator, standing behind the head in like manner, fixes the other. An incision is then made from the middle down to the os hyoides; if it be only the chin that is to be removed this cut will be sufficient, but if a larger portion be to be taken away, another will be necessary, made along the anterior part of the bone so as to form a cross. The skin, which adheres firmly, is to be dissected back on both sides, and the bone denuded, by dividing the periosteum with the knife, at the part to be sawed through. M. Dupuytren directs the periosteum on the posterior part of the bone to be cut, by thrusting the knife upwards behind it, and turning its edge towards the bone; but M. Lisfranc objects to this, as it may probably wound vessels which, in the living subject, would furnish considerable and even dangerous hemorrhage.

The saw is now to be applied, and the bone, being steadily fixed by an assistant, sawed through obliquely, that it may come in perfect contact with its opposed portion, which is to be cut through at the corresponding point. In order to avoid wounding the nose or upper lip while sawing through the bone, those parts should be shielded from the teeth of the instrument by a pad of soft cloth. The division of the bone being effected, its separation from the soft parts is to be completed with the knife. The hemorrhage produced by such an operation on the living subject, should be suppressed by drawing out the tongue, seizing with a tenaculum such arteries as can be detected, and securing them with ligatures, after which, if blood still continues to flow from invisible sources, the actual cautery is directed to be applied. The extremities of the bone are then to be placed in perfect coaptation, and the edges of the wound brought into contact; pads of lint are to be placed so as to produce compression, and the whole kept together by a roller judiciously applied. Previous to the operation it will be requisite to extract one or two teeth on each side, at the part where the bone is to be sawn through.

Puncturing the Pericardium.—M. Boyer, in his Traité des Maladies Chirurgicales, observes: when without swerving from the path of prudence it is thought necessary to perform this operation, the method recommended by M. Skielderup, Professor of Anatomy at the University of Christiana in

Norway, should be preferred, it being less hazardous than any other. It consists in making a crucial incision through the integuments, removing a portion of the sternum by means of the trephine, and then puncturing the pericardium. The operation is directed to be performed, immediately below the part where the cartilaginous portion of the fifth rib unites with the sternum. Here the approximating layers of the two pleuræ leave an intervening triangular space, which is part of the anterior mediastinum, situated a little more to the left, than to the right, and which is filled by cellular membrane; its apex rising as high as the fifth rib, its base resting on the diaphragm. Thus, after having trephined the sternum at the part above mentioned, the pericardium may be opened without wounding the pleura; consequently the chest will not be penetrated. The crown of the trephine used should be of sufficient size to leave an opening in the sternum, the dimensions of which will admit the left index finger; this finger at the same time that it discovers the part at which fluctuation is most discernible, serves as a conductor for the bistoury, with which the pericardium is to be punctured. After having cut through the bone of the sternum, the condensed membrane or ligament lining its inner surface, will offer considerable resistance to the crown of the trephine, which should then be laid aside, and the adhesions divided by the bistoury. Should any hemorrhage follow, the operation should not be continued until it has ceased. Before making the puncture in the pericardium the body of the patient should be inclined forwards.

M. Richerand has supposed it possible to perform a radical cure for dropsy of the pericardium, by making a large opening in the sternum, opposite the heart, and incising a portion of the membrane, between the layers of which he conceives the atmospheric air would be a sufficient stimulant to excite adhesive inflammation.

Lateral Operation for Stone with the Lithotome Caché.—This instrument, generally employed by French surgeons, is recommended to be used as follows. The patient is to be placed, and the operation proceeded with as before, till the staff is laid bare, the operator keeping the nail of his left index finger resting in the groove. He then takes the lithotome caché by the handle, its blade being properly set, and passes it along his finger until its beak enters the groove of the staff, which is proved by making its point pass backwards and forwards along it. Now, rising, he takes hold of the staff with his left hand, and whilst he depresses it so as to make it perform a semicircle, pushes the lithotome along the groove into the bladder, and then withdraws the staff. The instrument being in the bladder is to be lifted upwards to avoid the rectum, and pressed towards the patient's

right side to steer clear of the left pudic artery. These cautions being observed, and the concealed blade so inclined that in coming forth it will cut the prostate downwards and outwards, the handles are to be approximated, the blade raised, and the gland being cut as just directed, the instrument is to be withdrawn in the direction of the external wound. The forceps may then be introduced along the finger; though M. Lisfranc recommends the introduction of a grooved conductor in the form of a blunt gorget. He directs it to be passed with its convexity upwards, and when in the bladder to be reversed, and the forceps introduced along its concavity: it is then to be withdrawn in the same manner as it entered, with its concave side downwards, and the stone felt for and extracted as before.

On the Operation for Stone on the Female.—In the rare cases in which it is found requisite to perform the operation on the female, it is generally done in the following way.

The patient being securely bound, a straight conductor or staff is passed by the urethra into the bladder, with its groove directed obliquely downwards and outwards towards the patient's left side, the back or convex part being pressed upwards in an opposite direction, in order to enlarge the calibre of the urethra. The operator, holding the staff with his left hand, passes a probe-pointed bistoury along its groove, which cuts through the urethra and neck of the bladder in the first named direction. He then withdraws the instruments and introduces his left index finger to feel for the stone, which having found, he passes his forceps, his fingers serving as a director, and extracts as before.

M. Lisfranc recommends the incision through the urethra and neck of the bladder to be made upwards, inclining it slightly to either side to avoid the symphysis pubis. By making the cut in this way, he says, incontinence of urine is not so frequent a consequence of the operation as when the urethra is divided downwards and laterally. Should the opening be not sufficiently large to allow the stone to pass, he directs another incision to be made downwards, and a little inclined to one side, by which means the largest calculus the pubes will admit, may be extracted.

Castration.—M. Lisfranc, after the first incision, recommends the tumour to be dissected from below upwards, which prevents the blood collecting before the point of the knife in the cellular texture of the scrotum. He secures the chord from slipping within the ring, by directing an assistant to place his index and middle fingers at a distance from each other behind, and his thumb before it, opposed to the interspace; he thus presses it against each finger, which prevents the possibility of its being

retracted; he then cuts through it, and ties such vessels as require ligatures.

Vincent Karn, a German surgeon, recommends the operation to be thus performed. An assistant with the fore-finger and thumb of one hand takes hold of the chord, with the integuments, above the part where it is to be cut through, whilst with the other he separates the diseased from the healthy testicle. The operator then raises the one diseased, and by a single stroke of the knife cuts it away with its scrotal covering, beginning the incision at the raphe of the scrotum and cutting obliquely upwards and outwards. The arteries being taken up and the edges of the wound approximated, the operation is finished. This method has the advantage of being short; but as in many cases the testicle is too much enlarged to admit of being removed at one cut, and as the chord cannot be securely fixed by being pinched up within the integuments, the former must be considered the safest plan of performing the operation.

When the disease extends along the chord, it is cruel to submit the patient to the unnecessary pain of the operation: though M. Lisfranc says in cases of this kind he has seen M. Dubois pull down the chord and then divide it, and M. Dupuytren cut up the inguinal canal to the internal ring, and there cut through the chord; but in all the cases the patients have died.

Again, it is a matter of opinion whether it is not the better plan to secure the whole chord by ligature, and thus do away with the necessity of tying each vessel separately. M. Richerand practises the operation in this way; but cases are related in which a ligature, including the whole chord, has produced such excessive pain and irritation as to necessitate its removal: the tying of nerves, and veins too, has sometimes produced fatal consequences; therefore the method of securing each vessel separately appears to be that which may be most safely pursued.

Amputation of the Second, or Third Phalanx of a Finger.—With us this operation is generally performed by making a circular incision round the finger, about a quarter of an inch nearer its extremity than the joint at which you are about to amputate; then an incision on each side, extending back from the first to the second joint, so as to form two flaps, which are to be dissected back, and the tendons, with the lateral and capsular ligaments cut through, which finishes the operation.

The following is the process adopted by M. Lisfranc, certainly more expeditious than the former; but as it leaves only a single flap, it is not probable that the wound will heal so readily by adhesion as when the operation is performed in the manner already described; yet a case might possibly occur, in

which the one operation could be performed, and the other not be practicable.

The hand being prone, is fixed by an assistant, who bends the other fingers and separates them from the one to be operated on. The operator, with the fore-finger and thumb of his left hand, takes hold of the phalanx to be amputated, placing his thumb on its dorsal, and his finger on its palmar surface, and having half bent it, observes the situation of the small fissure in the integuments on the side of the bone caused by that position; immediately before which the joint will be found. At this point, with a straight-bladed bistoury, he makes his incision, and at one sweep lays open the joint by cutting through the integuments and ligaments on the sides of the dorsum of the finger, from left to right. In cutting the ligaments at the sides, the edge of the bistoury is directed obliquely towards himself, and those on the dorsum in the opposite direction. The phalanx is now to be held by its sides, and the ligament at the under part cut through; the bistoury is then placed horizontally with regard to the phalanx, and a flap of sufficient length formed from its palmar surface by cutting between the integuments and bone.

In cases where the finger is so much swollen as to render demiflexion difficult and painful, M. Lisfranc recommends the operation to be reversed, and performed thus:

The hand being supine, and fixed by an assistant, the operator extends the diseased finger, and bends the others, that they may be out of the way of the knife. He then takes hold of the phalanx with his left hand, placing the thumb on the palmar, and fore-finger on the dorsal side, while with his other fingers he forms a support for the bistoury; which is to be introduced horizontally, immediately anterior to the fissure, in a line with the joint, and pushed through beneath the integuments to the opposite side, the point being directed obliquely upwards to avoid the bone, when a flap is to be formed by cutting forwards and outwards. This being done, and held back by the assistant, the heel of the bistoury is applied to the base of the flap; when, by drawing it from left to right, the joint is cut through, which removes the phalanx. In operating in this way at the second phalanx, the point of the bistoury should be passed immediately under the fissure formed in the integuments on the palmar surface. No ligature will be required for the divided vessels; pinching their bleeding extremities with the forceps being sufficient to stop the hemorrhage.

Amputation at the Wrist Joint.—The following is M. Lisfranc's method: The tourniquet being applied, and the fore-arm fixed by an assistant with the hand prone, the operator places his two index fingers above the joint, one on the radius, the other on the ulna. He then bends and extends the hand, whilst

doing which he draws his fingers down the bones till he feels the styloid process of the radius, on the extremity of which he places the fore-finger of his left hand, and his thumb on the corresponding point of the ulna, if it be the right hand to be removed, and the reverse if it be the left. With a catling he makes a semilunar incision through the integuments, with its convexity towards the hand, beginning at the point before the thumb, and ending at the opposite one. Then, directing the point of his knife obliquely downwards, he cuts through the ligaments on the ulnar side, and by depressing the handle, continues his incision through the tendons and ligaments on the dorsum to the styloid process, at the same time bending the hand so as to expose the articulatory surface of the bones of the wrist. Having glided his knife through the joint, and divided the capsular ligament, and tendons below, he forms a flap of the integuments, of sufficient length to cover the stump, from the palmar surface, by cuting towards himself, taking care to avoid the pisiform bone.

The latter operation may be reversed and performed thus: Having found the extremities of the radius and ulna as before, place the forearm in a state between pronation and supination, and thrust the point of the catling beneath the integuments from the anterior and inner edge of the ulna, till it appears just before the styloid process of the radius, and form a sufficient flap, by cutting towards the palm. Then cut through the integuments and tendons on the dorsal side, and finish the operation by cutting through the joint, from before the styloid process of the radius downwards.

Three arteries generally require to be secured after this operation: the radial, the ulnar, and the interrosseal. The cut surfaces are to be approximated by adhesive plaster and the arm kept in a sling.

Amputation of the Elbow Joint.—Though the stump after this operation is not more useful than when the amputation is performed at the lower part of the humerus, and though the healing process is no longer protracted, yet it has been performed by M. Dupuytren in Paris. M. Lisfranc relates that in one case of which he was a witness, the wound was several months before it was completely healed.

The following is the method of operating, adopted by M. Dupuytren:—

The brachial artery being compressed by the tourniquet, and the extremity fixed by assistants above and below the elbow; the operator thrusts a catling beneath the integuments and muscles of the forearm, just below the condyles of the humerus, at the bend of the elbow, and forms a flap three inches in length, by cutting towards the hand. This flap being held back, he

cuts through the integuments and muscles on the posterior side of the arm, by an incision level with the extremity of the olecranon. Then feeling with his left thumb for the head of the radius, he separates it from the humerus by directing his knife obliquely between the two bones, and removes the ulna by cuting round its sigmoid cavity, taking away as much of the capsular ligament as possible. The bleeding vessels being tied, the condyles of the humerus are covered by the flap, the edges of the wound approximated by adhesive plaster, and a bandage applied.

Amputation at the Shoulder Joint.—M. Lisfranc recommends the following method, which, if dexterously executed, is certainly the most expeditious; it however requires considerable practice to accomplish it skilfully.

Supposing the left extremity is to be removed; the patient is placed on an elevated seat, one assistant pressing the artery above the clavicle on the first rib, whilst another draws the arm forwards. The operator, standing behind the patient with a long-bladed catling, pierces the integuments on the inner edge of the latissimus dorsi muscle, opposite the middle of the axilla, and pushes it obliquely upwards and forwards, till its point strikes against the under surface of the acromion; then by raising the handle of the knife its point is lowered, and protruded just before the clavicle, at the part where it joins the acromion. He then, by cutting downwards and outwards, forms a flap from the superior and posterior part of the arm, including the whole breadth of the deltoid muscle, and a part of the latissimus dorsi. This being held back by the assistant, the joint is cut through, by passing the knife between its articulatory from behind forwards, and a corresponding flap is formed by cutting downwards and outwards between the muscles and bone on the inner side of the arm. The vessels being tied, and the flaps placed in contact with each other, the operation is finished.

In operating on the right side, the patient should be seated on a low chair, and the catling thrust from above downwards, introducing it just before the point where the clavicle is connected to the acromion, and raising the hand backwards and downwards, till it appears on the inner edge of the latissimus dorsi, when the flap is to be formed, and the operation continued as before.

M. Richerand observes "by this method a dexterous operator can separate the arm from the trunk as quickly as an expert carver detaches the wing of a partridge."

These specimens of Mr. Averill's work will show that it is an extremely useful compendium, which no student or junior

surgeon ought to be without. We should be glad to see this author treat some other professional subjects in the same compendious and scientific way. There is still a most ample field —notwithstanding the numerous publications which appear yearly from our press.

A Practical Treatise on the Symptoms, Causes, Discrimination, and Treatment, of some of the most important Complaints that affect the Secretion and Excretion of the Urine. The whole exhibiting a comprehensive View of the various Diseases of the Kidneys, Bladder, Prostate Gland, and Urethra. Illustrated by numerous Cases and Engravings. By JOHN HOWSHIP, Member of the Royal College of Surgeons in London, Societé Médicale d'Emulation of Paris, &c. &c. &c.

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IN a short introduction, Mr. Howship very handsomely acknowledges the assistance he has derived in his researches from his friends, especially Mr. Heaviside, Dr. Hooper, &c. The former of these gentlemen, indeed, has afforded him some of the most interesting cases in the volume, which may be said to be in a great measure the record of that experienced and veteran surgeon's practice in this class of complaints.

We shall now proceed, without further preface, to notice some of the most prominent points of this work, which is divided into two principal parts: the first treating of "those diseases that affect the secretion of urine;" and the second, "the diseases that regard the excretion of urine." The subdivisions of chapters, sections, and separate paragraphs, defy enumeration. There are ninety-one cases illustrating the diseases described, and four plates. A very copious Index concludes the volume.

The first subject treated of is *suppression of urine, and its causes*, and these are discussed in the following order: suppression from congestion, from inflammation in the kidneys, from calculi in the kidneys; and the chapter concludes with cases of abscess affecting those glands. We do not find any thing that need detain us in the symptoms or treatment of the first class of these affections. The method of relief, or cure, resolves itself into bleeding, either genéral or topical, the warm bath, aperients, and, lastly, blisters and terebinthinate medicines. On the application of blisters, Mr. Howship remarks, that "they are said to be hazardous in renal inflammations, from the possibility of absorption;" he has, however, frequently directed them, and almost invariably with advantage. (page 11.) Complete suppression is sometimes the consequence of repelled gout; and

this circumstance should be borne in mind, because it must necessarily influence the treatment; and, upon the whole, it may be said, as a general rule, that inflammations of the kidney do not require the same rigorous and free use of the lancet which is indicated in other visceral inflammations: and the rather so, as it is a disease most commonly attacking people beyond the middle period of life, and who are affected with gout or some other constitutional taint.

In speaking of *abscess of the kidney*, which, as a consequence of inflammation, follows next in order, our author distinguishes the scrofulous abscess from that which is the product of common phlegmonous inflammation. In the former, the sympathetic irritation at the neck of the bladder he considers as the leading symptom, and the only apparent source of misery to the patient. One well marked case only of this affection is mentioned by Mr. Howship, as having occurred in his own practice; and, upon the whole, the information upon this interesting subject is scanty, and not very satisfactory; and the method of treatment is dismissed with a few general remarks.

"The kidney is, however, subject to other chronic derangements of structure; one of the principal of which is the formation of serous cavities, or cysts, within its substance, or upon its surfaces. The most common variety of this disease consists of cavities filled with a limpid fluid, in some instances few in number, occupying the external part only; in other exceedingly numerous, and dispersed throughout the substance of the gland. I have most commonly seen these appearances between the peritoneal surface and the cortical substance of the kidney; part of the transparent membranous cyst raised above the surface, and part of its fluid contents buried within the substance of the gland. These cysts appear to originate in the fine cellular texture connecting together the solid structure of the kidney. Serous fluid is deposited at certain points, and, as this fluid accumulates, the pressure from within probably operates by condensing the cellular structure, so as to form a kind of fine cysts. As these cysts progressively increase in size or number, the solid substance of the kidney is removed by absorption, till at length, where the disease has been of long standing, scarcely a vestige remains of the natural organization. The most beautiful specimen I have ever seen of this disease, is to be found in the elegant collection of Dr. Hooper. The kidney is much enlarged, and entirely converted into a closely disposed assemblage of cysts. A section carried through the whole exposes these cavities, from the size of a currant up to that of a walnut, without any remaining trace of healthy structure.

"Another variety of serous cysts, to which the kidney is subject, constitutes the true hydatid; where the fine membranous bags containing the fluid, instead of being intimately connected with the surrounding parts, as in the former kind, are loose and detached, so that, if the serous cavity containing them happens to rupture into the pel-

vis of the kidney, the hydatids may escape into the ureter, and, thus finding their way down into the bladder, pass off with the urine.

"The symptoms attending these affections are always extremely obscure, and in some cases pass entirely unnoticed. In a case mentioned by Dr. Davis, a middle aged lady, after repeated attacks of pain in the loins, had regular symptoms of stone in the left kidney; a grinding or acute pain in the part, vomiting, the urine in the paroxysm tinged with blood, and containing small shreds of coagula. During the attack, more than a dozen hydatids were passed, thin and membranous; some an inch and a half long, the thickness of a goose-quill, and filled with a fluid, which in taste and smell appeared to be urine. The paroxysm generally lasted some hours; and, when all the hydatids had come away, which happened in the successive endeavours to void the urine, the pain in the back, &c. abated, and she continued easy and well for the rest of the day. The patient perfectly recovered.

"One of the least frequent consequences of disease in the kidney, is induration or scirrhus. This state has been described as one of the occasional effects of inflammation, and M. Desault has enumerated the symptoms with which he considered the affection might be attended. Upon none of these signs, however, should I confidently rely, as enabling the practitioner to distinguish a scirrhous affection of kidney from any other chronic state of disease.

"Should the symptoms of inflammation in the kidney suddenly give way, all local pain suddenly subside, the pulse losing its firmness and becoming unsteady, there will be ground for apprehending that, overpowered and exhausted by excitement, the increased action is sinking into a state of gangrene. This occurrence, which I have never myself witnessed, appears to be invariably fatal. It is right always to bear in mind the possibility of so serious an event, as an additional motive to activity and vigilance in relieving and moderating that excess of action which can alone lead to it.

"Provided, however, the general health is good, it is remarkable how considerable a degree of irritation the kidney will sometimes be able to support. A case proving this is related in Dr. Hennen's valuable work on Military Surgery, where a large fragment of cloth, driven by a musket-ball through the body, lodged in the kidney, inducing repeated abscesses and severe peritoneal inflammation, was afterwards traced, by its symptoms, making its way down the ureter into the bladder, and thence outwards by the urethra, after nearly eight months of protracted and severe suffering, from which the patient eventually recovered."—(p. 36—39.)

Chapter 2d, on the *morbid appearances of the urine*, commences with the appearance of blood, and which, says our author, may be derived either from the kidneys, the ureters, the bladder, or the urethra. With the exception of scurvy, the presence of calculi in the kidney is, in our opinion, by far the most frequent cause of hemorrhage from those glands. In the case of scurvy, the accompanying constitutional symptoms will

sufficiently point out the source of the bleeding, and suggest the method of cure.

"A discharge of blood perhaps never takes place from the ureters, unless, from the previous irritation of calculi, they have become highly vascular, and then suffered injury. In a healthy state, their supply of blood is not such as to furnish the means of notable hemorrhage; but, where the patient labours under cancerous or fungous disease of the bladder, or where an enlarged or varicose state of the vessels about the neck of the bladder exists, bleeding may at any time arise.

"Bleeding from the urethra frequently arises from the passage or lodgement of a calculus: it sometimes takes place from the use of caustic in stricture, from the forcing a passage through a stricture, or the laceration of some part of the canal. It is not an uncommon occurrence in the inflammatorry stage of gonorrhœa, particularly during the violence of chordee; and is generally the first consequence of violent contusion of the parts.

"From the symptoms, it may be generally determined, with tolerable precision, from whence the bleeding is derived. Where hemorrhage proceeds from the kidneys, it is frequently preceded or attended by pain or sense of fulness in the region of the loins; although, if the blood passes by the capillary arteries, this may not always be the case. In those affections where the loins have previously suffered by external violence, there can be no difficulty. Should the preceding history show the probable existence of renal calculi, the appearance of blood will be at once referred to its proper source; and, where bleeding takes place from the ureter, in consequence of a stone passing down, attentive consideration of the symptoms will generally remove any doubt.

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"Where blood flows from the vessels of the urethra, it may be generally known by the hemorrhage either coming on, or continuing, independent of the act or desire of voiding the urine; the blood is also usually pure, and unmixed with the urine, and, on standing, forms a coagulum, bearing a just proportion to the serum, as in healthy blood. Now and then, however, these appearances are not to be relied upon; for M. Desault observes, what I have myself more than once seen, that occasionally, either from a coagulum forming, or from some other cause, blood poured out into the urethra will flow backward into the bladder: it will then induce another set of symptoms, and thus be very apt to mislead the judgment.

"Blood passed with the urine, if in minute proportion, will merely impart a scarlet blush to the urine: when, however, any quantity has flowed into the bladder, unless voided immediately, it forms a coagulum, and the efforts at expulsion will then fail. In this state of things, the retention of urine is not the least common nor the least serious consequence." (p. 52—54.)

The treatment of this symptom must, of course, be conducted in reference to the affection of the particular organ; but, when blood has become effused into the bladder, it will be ne-

cessary to adopt some means for facilitating its dissolution and removal. For this purpose our author recommends, as the most safe and harmless proceeding, the injecting into the bladder, by means of a catheter, a quantity of warm water, previously rendered perfectly soft by the addition of a little alkali. The longer this can be retained the better. In addition to this means, Mr. Howship recommends breaking down the coagulum, by means of a small silver catheter. Every movement of the instrument, he goes on to say, should be conducted with the greatest caution, and the patient being desired to say when it gives pain: the same exact direction should not a second time be given to the point, especially if there is any suspicion of the bladder itself being unsound. (p. 58.) The smaller instrument withdrawn, the largest may now be introduced, and probably some urine will flow. Three cases in illustration conclude this section.

Section 2d, *on the appearance of pus in the urine.* This section will not detain us long. We are not ourselves convinced of the possibility, upon all occasions, of distinguishing purulent from other deposits in the urine. The tests laid down by our author, and the microscopic examinations, are not always available in practice. Besides, as he himself has observed, mucous surfaces can, and do, pour out discharges truly purulent, without any breach of surface; and the detection of this latter circumstance is, after all, our principal motive for wishing to arrive at a positive decision on the subject. The following paragraph, however, in our opinion, clears up the difficulty, as far as it is capable of being cleared up, and they are entirely conformable to our own opinions.

"The opportunities of examining urine in which the matter deposited is, properly speaking, purulent, are generally in cases where the fact is already rendered clear by the other symptoms; and, consequently, the determining the nature of the deposit becomes unnecessary. In one very recent instance of this kind, a copious deposit of purulent and coagulated albuminous matter in the urine occurred in a man in whom there were strong reasons for believing these appearances arose from purulent disease of kidney. No medicines appeared either to relieve or to influence the progress of his complaint; from the continuance of which, sinking into colliquative diarrhœa, he at length died. On examination, I most unexpectedly found the kidneys and ureters perfectly sound; but an abscess formed within the psoas muscle, connected more intimately by thickening and disease of the cellular membrane, to the lateral part of an otherwise healthy bladder, had discharged its contents into the cavity by a small opening, which thus passed off freely with the urine by the urethra.

"The importance, however, of not asserting or admitting the presence of ulceration in any internal part before it actually exists, is more considerable than may at first be imagined. Any consequence of irri-

tation, any altered action upon a natural surface, it is pretty generally known, may often be corrected; but, if that natural surface is once broken up by ulceration, the probability of its restoration, or in other words, the chance of a cure, becomes exceedingly diminished. Now, suppose a patient with irritable bladder, and the appearance of filmy albuminous substances in his urine, is told by a surgeon of high character that there is an ulcer in the bladder, and that those substances are the coatings of the ulcer, he is depressed, but not relieved. But, should two other opinions fortunately coincide in considering his complaints derived from irritation only, and capable of being removed, he feels fresh confidence, his spirits improve, his constitution recovers the power of helping itself; and this state of constitution being, in my opinion, very often of more consequence than any medical treatment, it becomes evidently important to the patient's welfare that his case should not be set before him clothed in imaginary terrors: nor, indeed, should it be placed in any less favourable point of view than known facts will warrant. There is rarely any necessity for concealing the truth; indeed, it may always be made known in proper terms, even when unfavourable: but, where the actual circumstances remain conjectural, it appears to me a serious duty to avoid putting a strained construction upon every incident or symptom; when the only effect can be to give it additional importance, by setting it in the most unfavourable light, and the only object an idle affectation of superior discernment." (p. 67—69.)

The third section, *on the appearance of albuminous matter in the urine*, commences with noticing those deposits usually the product of general disease, &c. and particularly from gout transferred: in fact, so various are the causes, that to the skill and sagacity of the practitioner must be left the task of tracing the disease to its source. External injuries in the neighbourhood of the kidneys, irritation at the neck of the bladder, and disease of the prostate gland, are some of the local causes of these depositions, more especially coming within the range of the surgeon's practice; and which are illustrated, in the work before us, by two or three very good cases.

From page 79 to 154, the subject of *gravel* and *calculus* is discussed; but we do not find any thing of novelty to arrest our attention. Mr. Howship shows himself to be intimately acquainted with the writings of Drs. Prout, Marcet, and other modern writers; but in all that relates to the various modes that have been proposed for performing the operation of lithotomy, as well as for extracting calculi from the bladder of the male and female, he is neither so full nor comprehensive as might have been expected in a work professedly surgical: perhaps he is of opinion that these mechanical contrivances, especially, are not likely to be often available in practice; or that, in certain instances, they afford only a chance of multiplying the disease they are intended to remove; and, probably, such a view of the

matter, after all, is not very far from the truth. We can, however, conceive a case, in which the application of such an instrument as Sir Astley Cooper has successfully used for the removal of small calculi from the bladder, may be attended with peculiar advantages; obviating the necessity of the operation, which, at certain periods of life, and indeed under the most favourable circumstances, is perhaps the most formidable, and precarious in its result, of any within the range of surgery; but beyond this our hopes do not extend. The length of the canal in the male,—its irritability,—the impossibility of dilating it beyond a certain extent, will always afford obstacles to the general adoption of this practice; and, with regard to the plan of breaking down a large calculus in the bladder, for the purpose of extracting it, we do not hesitate to condemn this as bad practice, unless we are quite certain of getting away *all* the fragments. We are much surprised, however, that Mr. Howship has said so little relative to the extraction of calculi from the female bladder by means of dilatation, and which he has scarcely done more than allude to. He has omitted also any description of the high operation for the stone; and his history of that operation, and the different methods of performing it, are very meagre, and will not enable the surgeon to dispense with searching for further information, and perusing many works, the substance of which he might have expected to have found here.

We come now to the fifth section, treating of *irritable bladder;* but, after mentioning the general leading symptoms of this affection, and the numerous causes from whence it originates, he says, that "a degree of irritation in the bladder is an occasional consequence of external violence, or wound," (page 156); and this leads him to a digression on wounds of the bladder; and some instances are adduced, chiefly from LARREY's "Chirurgie Militaire," of recovery from gun-shot and other wounds of this viscus. It is well known that upon more than one occasion a musket-ball has been lodged in the bladder, and the man has perfectly recovered from the immediate consequences of the wound. The ball then produces the common symptoms of calculus, and has occasionally been extracted from the bladder by the operation of lithotomy. Here the symptoms of irritable bladder are, in fact, in no way different from those produced by a stone. Other causes of irritable bladder are next mentioned, such as cold, diseased prostate gland, diseases of the uterus, vagina, and rectum, cancer, and fungus hæmatodes; but we do not find that stricture is insisted upon, or even mentioned, as a cause of irritable bladder; and yet our experience induces us to believe that the spasmodic affection of the male urethra, the result of repeated inflammations of its

mucous lining, is among the most frequent causes of this unpleasant symptom. Eleven cases of irritable bladder, from various causes, conclude this section.

We have now arrived at the second part of Mr. Howship's work, "on the Diseases that regard the Excretion of Urine;" the first chapter of which treats of *Incontinence of Urine*, and which commences thus:

"Incontinence of urine is a complaint principally occurring in early youth, although not unknown in later periods of life. Aged persons, subject to stricture or to affection of prostate gland, are occasionally distressed by want of power to retain their urine, which, notwithstanding, is in these cases a symptom of a full bladder.

"The involuntary discharge of urine during sleep has been variously accounted for, but it seems to me that a moment's consideration will clearly explain it. The general muscular coat of the cavity of the bladder may be regarded as an involuntary muscle; while, on the contrary, the circular band of muscular fibres surrounding its neck is, to a certain degree, obedient to volition. Now, we know very well that a state of repose relaxes very much the whole system of voluntary muscles, exerting little or no influence over the system of involuntary movements. Upon this principle, it is evident an involuntary flow of urine might more readily occur during sleep, than while awake. There is, however, I believe, another circumstance tending to explain how it happens. In the majority of cases, the early age of the child prevents the ascertaining whether the urine flows during a state of positive oblivion, or whether this event takes place only under some particular mental impression. The latter state, I rather believe, is mostly an invariable condition. Intimately acquainted with a young person, in early youth long subject to this habit, he mentioned to me one circumstance that, upon these occasions, had often struck him as curious: it was, that he never at any time wetted the bed, unless, when engaged in a dream, he felt the accustomed uneasiness from desire to make water, and fancy immediately supplying what was wanting in time and place, the act of voiding it became, in point of fact, as perfectly voluntary as at any other time.

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"Where this disorder occurs in the adult as a simple affection, it is generally either the consequence of some paralytic affection at the neck of the bladder, or of some violent distention of the urethra.

* * * * * *

"Incontinence of urine in the female is sometimes induced by difficult labour. In a recent case of this kind in a young woman, who, at the request of the midwife, was kindly visited by Dr. Merriman, the labour was not considered such a one as should lead to ulceration or sloughing of the bladder; but, as she had scarcely any power of retention five weeks after delivery, I was requested to call upon her, examine her state, and consider whether any thing could be done for her relief. The orifice of the urethra I found irritable and red. I first passed the smooth blades of a light pair of polypus forceps (the blades

of which were rather long,) just so far into the urethra as to reach the bladder; and then very gently and slowly expanded the blades, by pressing my fingers by degrees between the handles. In two or three minutes I removed the forceps, and introduced my fore-finger, perceiving in my progress a strong and tight thread which surrounded the canal at one part, the rest of the urethra relaxing very freely. This narrow ligature at first prevented the easy introduction of the finger, till it probably ruptured, as I felt no more of it, and found more freedom in then examining the cavity of the bladder with the one finger, while I followed it by another introduced per vaginam, without perceiving any trace of wound or ulceration. A few drops of blood followed the operation. Calling some days after, I was agreeably surprised on finding that, since the dilatation of the urethra, (the urine previously almost always dropping away, but never passing in a full stream,) she had now the power of retaining nearly as long as she pleased, and also of voiding in a free and large stream, 'as in health.' She soon entirely recovered.

"Incontinence of urine, it is true, does not expose the patient to such serious consequences as are induced by retention; but it nevertheless subjects him to inconveniences extremely distressing to one who is still desirous to enjoy some of the comforts of society. The clothes, always moistened and wet with urine, acquiring at length so strong a smell as to be offensive to himself, and particularly so to all around him.

"Incontinence of urine in young subjects is generally very easily removed. All that is commonly required is to stimulate, to a certain degree, the neck of the bladder; and this is most conveniently accomplished by the application of a small blister to the loins, or, if that fails, to the perineum, the blister being for some time kept open, and dressed occasionally with the ung. lyttæ. The object is to keep up a degree of irritation at the neck of the bladder during a certain period, by which the parts are roused into action; and I believe this plan, simple as it is, will generally answer: at least, I have very frequently seen it succeed, but never known it to fail.

"Where this complaint occurs in the adult, induced by fatigue of the parts, from excessive debauchery, or perhaps the consequence of a slight paralytic affection, I know of no better mode of treatment than that just mentioned. A blister will here, however, sometimes fail; and, when this is the case, the tinct. lyttæ may be given internally, so as to answer the same purpose." (p. 202—205.)

In the instance of slight paralytic affections of the bladder, which occur in conjunction with other symptoms of paralysis, in addition to the means of cure proposed by Mr. Howship, we have found, upon more than one occasion, the best effects to follow the regular use of the catheter, twice or three times in the course of the day, relieving the bladder from two great an accumulation of urine, and permitting the muscular coat gradually to recover its tone. This short chapter concludes with a case of incontinence of urine, from using large bougies for a

supposed stricture; and which we conceive to be instructive, as a warning to those surgeons who advocate the use of instruments of dimensions so enormous, and which we have seen with astonishment—we had almost said, with horror.

"Oct. 20, 1818, I was consulted by a gentleman for stricture. He stated that, two years since, he was in town, under a surgeon of eminence in London, who told him his complaint was stricture, and passed in succession different sized metallic bougies, for several weeks; and then directed him to take a set with him down to Scotland, and pass them occasionally for himself. He produced the instruments, and the largest size (full half an inch in diameter) astonished me; though he said he could pass it, and proposed my seeing him do so. This, however, I objected to, saying I believed what he said, that it would in general find an obstruction before it had gone far; and well it might, while the urethra had any feeling; that the only symptom of which he complained, a want of power of retention, would hardly subside while he used any instrument of that size,—it being, in my judgment, not only unreasonable, but ridiculous, to think of passing such a bougie. In looking over his case of instruments, I selected the smallest of twelve, passed it as a full size into the bladder, without the least hindrance; and stated to him it was very clear there was no stricture at present, but that he could not go a more ready way to work, to produce either that or some other mischief in the canal, than by forcing in an instrument so much beyond the natural power of the urethra to receive, as that he had just shown me. To this he replied, by admitting that the introduction of the largest size had frequently brought on irritation about the prostate gland.

"I advised that he should do nothing; considering it most probable that, by discontinuing the use of instruments, the bladder would by degrees recover perfectly its power of retention."

The second chapter, on *retention of urine*, first details some of the more rare forms of this disease,—such as retention in the ureters from calculi or hydatids; and then proceeds to consider the case of retention in the bladder, and its causes, and which he reduces to three general heads: "First, those affections in which the coats of the bladder are deprived of their contractile force, from age, excess, the abuse of diuretics, affection of the brain or spinal marrow, over-distention, inflammation or spasm of the bladder, &c. Second, affections from causes within the cavity of the bladder, fungous tumour, coagulum of blood, extremely tenacious mucous, or albuminous matter effused from its inner membrane, &c. Third, affections, the consequence of displacement either of the bladder or other viscera, producing pressure on the urethra, or tumours, which in their development produce the same effect." (p. 221.) Each of these forms of retention are exemplified by one or more cases, but which the limits of a review do not permit us to extract, though some, especially of the more rare forms of disease, are interesting and

instructive. In the midst of these cases of retention, we find, from page 259 to 276, a section devoted to the consideration of gonorrhœa, in which Mr. Howship advocates the old fashioned practice of dilution, antiphlogistics, &c. Not one word is said relative to the power of cubebs, nor the propriety of an early use of astringent injections in the first outset of the disease, and before the inflammatory symptoms have become established. In fact, Mr. Howship's plan of treatment is adapted, and well adapted, to the most aggravated form of this affection in a very irritable constitution; but it must be admitted that the majority of those who contract gonorrhœa would never submit to so dilatory a plan of cure; neither is there commonly any necessity to subject them to it. What would a young gentleman say, for instance, to his surgeon, who should tell him "that in the course of a *few weeks* the inflammatory symptoms of his gonorrhœa would subside, *the only remaining circumstance* being a discharge from the urethra?" We are afraid that he would be apt to get out of humour with this *circumstance*, and his surgeon also.

Section the 17th treats of *retention produced by an enlarged condition of the prostate gland.* On this subject Mr. Howship's opinion has undergone a change since his first publication on these diseases, and he now adopts the arrangement of Desault, considering this diseased condition of the gland to arise either from inflammation, abscess, calculi within its substance, a varicose state of its vessels, or a scirrhous disease of its substance. (p. 292.) Each of these forms of disease is treated of, generally, in a very judicious, but in a somewhat concise, manner. The scirrhous enlargement of the gland is generally the disease of old age, but we have had occasion often to suspect the existence of some affection of this gland in much younger subjects, especially where gonorrhœas have been frequently contracted, and which complaint puts on very much the symptoms of spasmodic stricture. Of course, examination *per anum* is the only sure method of ascertaining the existence of this affection. We subjoin a case, which gives a good history of the common form of this disease.

"J. L., a man aged seventy-three, observed a degree of frequency in passing his water, in May, 1816. He soon afterward complained of being occasionally unable to pass it at all, even when he had left his bed for that purpose, until he had walked a little about the room.

"April 23, 1817.—He could pass no urine, though distressed with frequent desire and straining. On the 25th, he desired a medical gentleman to see him, who ordered the warm bath. He had still urgent desire, but passed nothing. On the 26th, I was requested to visit him, and, introducing a large catheter with perfect ease, drew off more than two quarts of water. The prostate gland, examined by

the rectum, was found considerably enlarged. From this time I continued to draw off the urine regularly till the 22d of May, when he recovered the power of expulsion. The water generally exhaled a strong ammoniacal odour, was of brownish colour, without mucus, but sometimes depositing dark-red particles of gravel.

"August 17.—He called, and said he had some returning difficulty in getting rid of his water, generally worse towards evening, and better on the approach of morning. Some leeches were directed to the perineum.

"Oct. 20.—He sent in great distress, not having passed any water for two days. I drew off two pints, and the retention left him.

"Jan. 28, 1818.—He sent to beg me to see him as soon as possible, having passed no water for the last thirty-six hours. I now drew off three and a half pints; after which the bladder recovered its power. It appeared that the last attack had been the consequence of some degree of intemperance.

"Jan. 1, 1819.—For several days the retention had returned. I again examined by the rectum, and found the prostate as large as the half of a middling-sized apple, so that the finger could scarcely compass its convexity, or distinctly reach the bladder above it.

"Sept. 3.—From severe cold, the retention returned, and had existed twenty-four hours when I visited him. The silver catheter found some obstruction from spasm at the bulb of the urethra, but, with some little pressure, passed on to the prostate; and here a finger, behind the scrotum, easily raised the point over the projecting part of the gland, and it readily slipped into the bladder. The water drawn off for two days, he again recovered the power of voiding it by the natural efforts.

"Jan. 26, 1820.—Had a return of retention, which resisted the introduction of the catheter with more than usual obstinacy, the prostate gland feeling of a cartilaginous firmness. By keeping the instrument in the bladder for a few days, he recovered. In June and September following, I was again obliged to relieve his full bladder, after which the power of expulsion returned.

"Nov. 1822.—He continued in good health, although occasionally obliged, for a day or two, to have recourse to the catheter."

The two following sections, on *retention from spasmodic stricture*, and on *retention from permanent stricture*, occupy nearly one hundred pages, including the details of upwards of twenty cases. There is nothing under these heads of disease that we feel it necessary to transcribe; and the length to which this article has already extended warns us to hasten to a conclusion.

The last section, on the *puncture of the bladder*, is short. Mr. Howship prefers performing this operation through the rectum; although he admits that, "where retention is consequent to disease, with much enlargement of the prostate gland, the puncture is more conveniently made above the pubes." (p.

412.) We shall conclude by giving our author's description of performing this operation through the rectum.

"In puncturing the bladder from the rectum, the trocar need not be much larger than that employed for hydrocele, although it must be twice the length, and should have a gentle even curvature. The form of the instrument, with the exception of its curve, should be that of the common trocar, with a triangular point, for the reasons already given.

"As to the position of the patient, it is not exceedingly material; the operation may be conveniently enough performed as he lies in bed. The fore-finger, well oiled, is to be first passed up into the rectum, and the degree of fulness of the bladder, as well as the most convenient point above the prostate gland, ascertained. When these circumstances are satisfactorily made out, the trocar pushed nearly, but not quite, through the canula, is to be gently introduced through the sphincter of the anus, and passed up until the extremity of the canula, corresponding in situation with the point of the finger already in the rectum, is felt to be against the part where the puncture is to take place. The canula being in the least degree retracted, while the stilet is pressed forward, places the instrument at once in a fit state for effecting the puncture; keeping in view the line of direction tending to the centre of the distended bladder, the trocar is now to be steadily passed forward through the coats of the intestine and bladder; when, the stilet being carefully withdrawn, the canula must be retained, and the urine allowed to flow off.

"As the accidental slipping of the canula out of the orifice in the bladder has been productive of inconvenience, from the premature healing of the wound, and the consequent necessity for repeating the puncture, it is desirable to have a little plate attached to the external part of the canula, perforated with holes, so as to admit of its being secured to a bandage, passing round the waist and between the thighs. This precaution, however, generally becomes unnecessary after the first week or two, as the opening usually very soon loses its disposition to heal, until the restoration of the natural passage for the urine renders it useless." (p. 413—414.)

Boyer *on Strangulated Hernia.**

(From the Quarterly Journal of Foreign Medicine and Surgery for Oct. 1823.)

The present volume is devoted to the surgical diseases of the abdomen, of which hernia is the chief; and to diseases of the kidneys and ureters. We believe little is now wanting to render this system complete but the diseases of the bladder

* Traité des Maladies Chirurgicales, &c., par M. le Baron Boyer, Professeur de Chirurgie-pratique, Chirurgien en chef de l'Hopital de la Charité, &c. Vol. VIII. à Paris, 1822. pp. 559.

and urethra, which—if we may be allowed to conjecture what an author is likely to perform—will occupy another volume only. Of this system, as presenting a complete view of modern surgery, it must be admitted, that it is by far the best which we possess, as well with regard to execution as to completeness. There is almost nowhere any great pretensions to originality, which, indeed, is not much wanted in a systematic work; but we every where meet with the convincing proofs of the author's extensive acquirements and information, both as regards the surgery of France and other countries—of a clear and unbiassed judgment on all the debated points of surgery—not merely the judgment of a man learned in books, but of one who has observed disease extensively for himself: and the whole is presented to the reader in a style at once clear and elegant, and totally devoid of those marks of presumption and conceit, which appears to adhere so closely to most of the second rate writers of France. We have observed, that in nothing do the French so far outstrip us as in their systematic treatises and text books; and in these, it is but justice to confess that they leave us far behind. Is it the Englishman's pride of heart, which makes him despise the humble labours of the compiler, which is the cause of the barrenness of our medical literature in text books?—or is it his dread of being set down as a systematist, or, what in many people's minds is equivalent—an old woman? Whatever be the cause, certain it is, that our medical science, considered as a whole, is in this respect exceedingly defective. That it arises from want of capacity—the requisite to write systems—no one will admit, who is at all conversant with the works of Dr. Good, or Dr. Thomson—works, indeed, which affix eras and land-marks to the progress of science, and associate the names of their authors with all her richest discoveries. It is our wish, as it is our duty, to guard British science from unmerited reproach; but it is equally imperative upon us to point out its defects, which, indeed, is the first step towards their removal.

To give a critical analyses of the whole of the volume before us, is out of the question; we shall therefore proceed to give such parts of it as may best display the merits of the author, and, at the same time, when brought together, form the most useful article to our readers—the two objects which we think a reviewer ought chiefly to have in his mind. The section comprising strangulation, as refers to hernia, and that upon diseases of the kidneys and ureters, appear to us to merit the preference; and the last has the advantage of forming one of a series of articles embracing all the diseases of the urinary apparatus.

STRANGULATION of a HERNIA, according to Boyer, is the complete, or almost complete, interception of the course of the

fœcal matters in the intestines; a definition which appears to us to be imperfect, in as far as it applies to one of the symptoms of the intestinal hernia only, and that perhaps not the most important. The causes of this strangulation are classed according to their seat: some take place in the herniary opening; others in the peritoneal sac; and a third class in the intestine or omentum which the hernia may contain. Strangulation is also sometimes the result of the accumulation of certain substances within the tumour.

It was long thought that, in umbilical and inguinal hernia particularly, the exclusive causes of strangulation were inflammation and contraction of the aponeurotic fibres which surround the herniary openings; but it is now well known that the aponeurotic fibres are very little susceptible of inflammation, and that, instead of possessing a power of contraction, they have a perpetual tendency to dilate. It is to be observed, however, that in many strangulated herniæ the displaced parts are strongly compressed by the aponeurotic opening, the surrounding fibres acting by virtue of their elasticity, and rendering it indispensable to dilate them to remove the constriction. It is further to be observed, that, though these fibres themselves are susceptible of no active contraction, yet they may come to exercise a pressure analogous to a muscular ring, in consequence of muscular fibres being continuous with the aponeurotic. It is only in recent herniæ, however, and those which are kept habitually reduced, that the aponeurotic ring preserves sufficient straitness to react upon the escaped organs; when old and unreduced, there is generally a tendency in the ring to dilate.

The peritoneal sac may be the agent of strangulation in hernia, by the spot which corresponds to the ring becoming thickened, and resistant; so that if, by any cause, the herniary contents become augmented in bulk, the unyielding neck of the sack produces a degree of constriction sufficient to give rise to all the symptoms of strangulation. This thickened neck of the sac (the *collet* of our author) usually corresponds to the herniary opening, though it is sometimes situated higher or lower: in the last case it is possible to recognise it before an operation; in the first, the operation may be finished, and the fact remain unknown, unless by the continuance of the symptoms, or sometimes by death, though usually its existence is ascertained during the operation, and the symptoms which it causes consequently removed by incising it.

Scarpa, in his treatise on inguinal hernia, has endeavoured to establish certain symptoms which may lead us to suspect, before the operation, whether the strangulation is caused by the neck of the sac, or by the aponeurotic opening. If, says he, the hernia has appeared in infancy, and has attained a considerable

volume in a short time; if, after having remained long reduced, it suddenly reappears during some effort on the part of the patient; if, by the finger, we discover that the edges of the aponeurotic opening are neither tense, nor closely applied upon the viscera; if, in our attempts at reduction, the viscera re-enter incompletely, and form a small tumour beyond the herniary opening, painful to pressure, and which disappears as soon as the parts are allowed again to issue;—we have good grounds to believe that the strangulation is produced by the neck of the sac, and not by the aponeurotic opening. It is seldom, says Boyer, that all these symptoms meet in the same case; and the presence of one or more is insufficient to lead even to a rational conjecture. It is observed by both these authors, that the strangulation is sometimes owing to both causes at once—a circumstance which it is of consequence the operator should recollect.

Accidental adhesions between the walls of the sac, or between these and the viscera, especially when under the form of bridles, or ligamentous chords, sometimes cause strangulation, in consequence of the intestine getting between one of these bridles and the sac, or becoming twisted around it; cases of which are described by Scarpa.

Some facts would lead us to believe that the sac may be ruptured, and the intestine yet strangulated in this accidental opening. I. L. Petit mentions a patient, in whom the upper part of the herniary sac was ruptured by a kick from a horse; and the viscera, escaping by this new opening, penetrated into the cellular tissue, and descended as low as mid-thigh. A similar case, which occurred in the practice of M. Boyer, is related by M. Rémond, in the *Journal de Médecine* for April, 1808. An infirmary man, aged 60, was incommoded from infancy with an inguinal hernia of the right side. This person had observed, for a long time, that pressure made upon the tumour caused it to ascend above the inguinal ring. This tendency increased so much, that, during the latter period of his life, he was obliged to compress the displaced viscera from above, downwards, in order to approach them to the inguinal canal. In fine, during a violent effort, the hernia became strangulated. Its form, when then examined, was singular: it extended upwards from the inguinal region, towards the umbilicus; and, on examination, it was easy to perceive that it was covered only by the skin. The operation being judged necessary, was performed by M. Boyer. The sac being opened, the incision was prolonged towards the umbilicus, in the whole extent of the tumour; a fold of intestine, five inches in length, was then exposed, of which only a very small part was contained in the true herniary sac; the rest had escaped by an accidental opening at the upper part of the sac, and had insinuated itself under the integuments and the apo-

neurosis of the external oblique muscle. The constriction was relieved, and the intestine reduced: the patient, however, did not survive the operation, and at the inspection of the dead body, this accidental rupture of the sac was clearly recognised.

The intestines themselves may be the agents of strangulation, either in consequence of certain adhesions which they may form, or from the descent of a new portion of intestines, which compresses the first. In mixed hernia the omentum may occasion strangulation, either by simple increase of its bulk, producing pressure, and consequently disturbing the function of the intestine; by its becoming scirrhous; by its forming adhesions and ligamentous bands, which act as those of the sac; or, in fine, the omentum may be ruptured, and the intestine, introducing itself into the rupture, become strangulated. Scarpa found, in one case, that the intestine had passed through the torn epiploon without being strangulated, though the ring formed by the rupture was thickened and indurated. In a case detailed by Baudelocque, strangulation was the immediate consequence of the rupture, from inflammatory swelling of the torn part; though in cases detailed by Arnaud and Callison, strangulation seems to have been the consequence of progressive thickening of the edges of the ring. The explanation, how cases of this sort occur, is simple. In many cases, the epiploon surrounds the intestine like a pouch: say that in these circumstances it contracts adhesions to the neck of the sac, and the patient makes some strong contraction of the abdominal muscles as in pregnancy, for example—it is clear that the intestine will be pushed violently against the omentum, prevented by its adhesions from yielding, and may rupture it. When the surgeon is called upon to operate in such cases, he finds the relations of the facts totally changed; in an ordinary entero-epiplocele, the omentum is found covering the intestine, as it naturally does in the abdomen, while in the case we speak of the intestine is more external, at least all below the part where the rupture has taken place.

Accumulation of matters in the loop of intestine forming the hernia, or the lodgement of foreign bodies there, sometimes also produces strangulation; as also collections of gas in the displaced intestine; inflammatory swelling of its coats; or, in short, any cause which augments the bulk of the herniary contents. According to Scarpa, strangulation sometimes occurs from the thickening and induration of the cremaster muscle and cellular substance exterior to the peritoneal sac, which the employment of ill-fitted bandages produces; the indurated part sometimes forming a circular stricture, at others a narrow elongated tube, in which the slightest augmentation in the bulk of the escaped parts causes the strangulation.

Some very curious and interesting cases of strangulation from the spontaneous reduction of hernia, have been recorded. In one of these, by Lobstein, the patient had a hernia on each side: during a sudden effort both disappeared, and all the symptoms of strangulation supervened. The hernia were again made to descend, and afterwards reduced with care, when the symptoms did not return. M. Boyer mentions a case which Chopart used to detail in his lectures. A very large hernia disappeared suddenly and spontaneously, and was followed by all the symptoms of strangulation. Every effort was tried in vain, to procure its descent; the patient died, and, at the inspection of his body, it was found that the intestine, in returning, had passed *behind* a transverse bridle, *before* which it had passed in issuing, and that this bridle was the cause of the strangulation. As to the spasmodic strangulation particularly mentioned by Richter, M. Boyer thinks that it possesses too little of a distinctive character to merit particular consideration.

The common symptoms of strangulation, are, impossibility to reduce the tumour; pain more or less acute, extending from the strangulated to the adjacent part, most sensible when the patient coughs or is erect; sensibility and tension of the tumour; anxiety, nausea, vomiting, fever, suppression of the stones, tension of the abdomen, and cough. These symptoms vary according to the degree of inflammation present, or, as M. Boyer says, according as the strangulation is inflammatory, or by *engouement*, the generic term which he applies to strangulation in old voluminous hernia, of which the opening is large, and in which the strangulation is more immediately produced by the accumulation of stercoral matter in the distended intestine. In these cases the symptoms of strangulation show themselves slowly, and are preceded by augmentation in the bulk of the tumour; there is little pain for some days, either in the tumour or in the abdomen; nausea and vomiting at last supervene, but in a moderate degree; fever, also, which is mild; and very frequently, if nothing is done to relieve the patient, inflammation at last occurs, and the symptoms then become as pressing as in the case which is inflammatory from the commencement. M. Boyer justly attaches considerable importance to the new character which the disease thus assumes; and guards the young surgeon against remaining inactive at this crisis, as the success of the operation, which is generally now necessary, is able to be much influenced by the loss of even a few hours.

The inflammatory strangulation, for the most part, occurs suddenly in recent hernia, whether small or large, or in those which, having been retained some time by a bandage, reappear suddenly during some violent effort, especially in young plethoric subjects. The constriction in these cases is such that

the circulation in the blood vessels is arrested, as well as the course of the alvine matters; the tumour becomes tense and painful; even the integuments are sometimes red and tense; nausea and painful vomiting supervene, first of alimentary matter, then of bilious and glairy matters possessing a fœcal odour; the pulse becomes hard, small, and quick; the abdomen tense and painful; the fever augments; hiccup succeeds; the features change, and the strangulated parts speedily fall into a state of gangrene. In some cases the symptoms are so intense, and their progress so rapid, that patients have been known to die within the first day from the attack. On the contrary, they are sometimes so mild, that death does not occur till the eighth day, or later. These insidious cases merit the practitioner's particular attention, because the symptoms are exceedingly liable to assume a sudden degree of intensity.

Strangulated hernia is usually easily distinguished, unless when the tumour is so exceedingly small as to be overlooked. On the other hand, practitioners sometimes attribute too much to the hernia, in those cases when there is a gastric derangement, or vomiting, which may occur in individuals with hernia as well as in others, and yet be wholly independent of the hernia. Reduction affords a satisfactory test, that these symptoms do not arise from strangulation when it can be effected, but the impossibility to reduce a hernia in the same circumstances leaves the diagnosis still doubtful, as this hernia may have been long adherent and irreducible. If the hernia has become suddenly irreducible, and the symptoms of ileus are present, the presumption that there is strangulation is strong. Pott gives us the case of a young man, who for some years was subject to an irreducible hernia, in whom suddenly occurred vomiting, obstinate constipation, and tenderness of the whole abdomen, while the hernia itself remained without pain and tension. At a consultation, most of the practitioners proposed the operation; but Pott opposed it, and it was deferred. Next day the patient died: the intestine and the epiploon contained in the hernia were perfectly sound; but the jejunum contained in the cavity of the belly was inflamed and gangrenous. In another case, nearly similar, the operation was practised; the herniary contents were also quite sound, and were reduced without the necessity of dilating the ring. The patient died on the following day, and the colon, within the cavity of the abdomen, was found gangrenous. In these doubtful cases we ought, says Boyer, to ascertain if the pain was first felt in the abdomen, or in the hernia; if the hernia continues soft while the abdomen becomes tense; if the symptoms appear suddenly, without any effort on the part of the patient, and without augmentation of the tumour; if the herniary opening remains free, and we can distinguish, with the finger, no tension at the neck of the sac;

and, finally, if the symptoms have begun in the abdomen, and have extended more lately to the hernia; all which circumstances indicate that the symptoms do not depend on the hernia, but upon some affection supervening in the abdomen. Inflammation occurring in the hernia itself might be very apt to be mistaken for strangulation; but in fact the one almost uniformly produces the other, as all experienced practitioners know, and then the indications are the same.

What we have most to fear in strangulated hernia, is inflammation, which is more especially dangerous in strong vigorous subjects; when the strangulation is produced by the ring or the crural arch, and takes place suddenly in consequence of some violent effort, or of a fall; and above all, when it occurs at the moment when the hernia is formed. Pott has seen in such a case, gangrene supervene within eight hours. In old voluminous hernia, the danger of strangulation is seldom pressing, as the ring has usually lost its elasticity and is so much enlarged that it hardly ever exercises a violent constriction on the parts which it embraces. From the difference of anatomical structure in the two sexes, it arises, that strangulation of an inguinal hernia is much more serious in woman than in man, and *vice versa*. An enterocele, when strangulated, is uniformly more dangerous than an epiplocele: in the former the danger is often greater in proportion as there is less of intestine contained in the sac; in the latter, strangulation is rarely mortal. In mixed hernia, the epiploon serves sometimes in some degree to protect the intestine from the ruder effects of compression.

Diseases of the Kidneys and Ureters.

In a state of health, the quantity of the urine passed in a day generally measures between a third and a half of the liquid and solid ingesta; but it varies much according to age, climate, the state of the alvine and cutaneous evacuations, and so forth, and these variations may be considerable, without implying a state of disease. When the secretion of the kidney is excessive, and the urine is loaded with a saccharine matter, the disease is named diabetes; and opposed to this we have suppression of urine when this fluid is not secreted at all, or but scantily. We do not mean to follow M. Boyer in his disquisitions on diabetes, as we do not find that he has advanced any thing very interesting on this subject; but we shall confine ourselves to those diseases of the kidneys and ureters more strictly surgical.

SUPPRESSION of the URINE is most frequently the effect of other diseases which exercise more or less of influence upon the functions of the kidneys; it is an affection of the secretion, as retention is of the excretion; it may be complete or incomplete,

according as the secretion is completely arrested, or only in part; of the one kidney only, or in both—though ordinarily, when the functions of one kidney are disturbed, those of the other suffer through sympathy, so that what was at first an incomplete, becomes a complete suppression. When this affection attacks suddenly both kidneys at once, the state of the patient is perilous in the extreme. To ascertain that a patient labours under suppression, who has rendered little or no urine for some days, we should attend to the following symptoms: softness and want of tension in the epigastrium; the bladder loose and flaccid, which may be ascertained either by applying the hand above the pubis, or per anum; the patient having no desire to void urine; the introduction of a catheter procuring the issue of no urine, or but of a small quantity, which may have been in the bladder at the moment the suppression occurred. To these are added the symptoms which belong to the disease, of which the suppression is the result, and which differ according to the seat and nature of these diseases. In ascites, for example, the secretion of the urine is always diminished, sometimes entirely suspended. The suppression, according to M. Boyer, sometimes precedes the hydropsie, which then appears to be owing to the *reflux* of the urine; sometimes it succeeds, in which case it is probably the effect of the dropsy. We presume to think that in most cases the suppression is a symptom of the dropsy, unless when the dropsy as well as the suppression depend on some organic lesion of the kidneys.

The cause of the suppression which we sometimes encounter in hysterical and hypochondriacal patients, is obscure. M. Boyer thinks it should be attributed to spasm of the uriniferous ducts, which renders them unimpermeable to the urine. All we dare venture to say to this is, that it may be so. When the suppression is complete, it is usually attended with the most dangerous symptoms, unless the place of the urinary secretion be supplied by some other serous evacuation, diarrhœa, sweats, vomitings, &c., in which case the malady may persist for months, or years, without producing death.

Wounds of the kidneys are rare, in consequence of the deep situation and the mass of parts which cover these organs. To ascertain their existence we should attend to the directions and the depth of the wound; to whether the patient passes blood by the urethra, or bloody urine; to retention produced by collections of blood in the bladder, or clots stopping up the urethra; to whether he has a fixed pain in the lumbar region, extending to the groin and testicle of the same side with retraction of the latter. But the symptoms vary much according to the part of the kidney which is wounded, and as the lesion of the other organs is more or less severe. If none of the large vessels are

opened, and the other viscera are not severely injured, the patient has merely a discharge of blood, or bloody urine by the urethra, and the wound, as M. Boyer has had occasion to observe, generally heals in ten or twelve days. More generally, however, the symptoms, even in cases which get well, are much more severe, the patient ordinarily continuing to have discharge of pus from the bladder for a long time. Haller mentions the case of a young medical student who had a sword plunged into the lumbar region by one of his companions: he experienced little pain in the part though he at first passed much blood with his urine, and afterwards pus for three months. Haller attributes the cure to the strict diet which this young student followed, he having taken little besides barley water for three months. In the 42d vol. of the *Jour. de Méd.* there is the case of a bayonet wound of the right kidney which terminated happily on the 24th day, although the patient at first experienced a lively pain, and general tension of the abdomen; and on the second day passed two plates full of arterial blood by the urethra. On the third day, also, there was alarming hemorrhage from the wound; and on the following days there was frequent retention of urine, caused by clots of blood and pain at the epigastrium; but after the 12th day all the bad symptoms disappeared. Repeated bleeding, rigorous diet, and injections, were the curative means employed. La Motte furnishes us with a case of wound of the kidney, which terminated happily. This wound was made with a large sword, which was plunged into the loins at the right side, and came out at the left, considerably more forward than where it entered. The patient at first lost much blood by the wounds, and afterwards by the urethra; after the eighth day, healthy suppuration was established, and the patient was cured in six weeks.

M. Boyer observes, that almost all the cases which are recorded of wounds of the kidney getting well, were from behind: and, indeed, if we attend to the important parts immediately in front of the kidney, we at once see that they ought to be infinitely more severe. If the renal arteries are wounded, and, at the same time the peritoneum, we have interior hemorrhage, which is almost always mortal.

Laubius mentions the case of a sailor, who was struck under the last false ribs of the left side with a large knife. The patient at first passed much blood by the urethra; violent fever, vomiting, and death, speedily supervened. On inspection much blood was found in the cavity of the abdomen; the knife had traversed the spleen, and had been plunged deeply into the left kidney. We are counselled to combat the first symptoms of these wounds by bleedings, injections, diluent drinks, &c.

IDIOPATHIC INFLAMMATION of the kidneys is generally oc-

casioned by blows on the lumbar region; prolonged and rapid journeys on horseback, especially in hot weather; and in the use of powerful diuretics, such as the turpentines and cantharides. To these M. Boyer, in compliance with the doctrines of the French schools, adds, repercussion of gout, rheumatism, skin diseases, and suppression of hemorrhoidal and other habitual evacuations. This, like all the other acute internal inflammation, is accompanied by fever, which sometimes precedes, sometimes succeeds a deep pain in the region of one or both kidneys. This pain is at first obtuse, and tensive; but it afterwards becomes acute and darting, and is accompanied by a sensation of burning heat. It is less poignant, however, than in the nephritis depending on calculus, and does not extend in so distinct a manner along the ureters towards the groins; it is not ordinarily accompanied with retraction of the testicle, or numbness of the thigh, nor do the movements of the body increase it to the same degree as in lumbago, and other rheumatismal affection of the muscles of the pelvis. The urine is commonly changed to a deep red colour, and is rendered frequently, and in small quantities at a time. When the inflammation is very violent, it is clear and limpid; and when the disease extends to both kidneys, it is sometimes entirely suppressed; but, according to Fred. Hoffman, it is very rare that both kidneys are thus affected simultaneously. The pulse is at first full and vibratory, but, as the spasm and pain advance, it becomes concentrated, feeble, hard, and intermittent.

We are to attempt to procure resolutions of this inflammation by the usual means, especially bleeding, which often requires to be repeated four or five times in the course of the first twenty-four hours. Our readers must have observed that the French surgeons employ the lancet with more freedom than the physicians; but yet, so far as we know, their notions with regard to the effects of this remedy are limited and unscientific. It seems to us that the medical men in France have the vulgar notion with regard to bleeding, that it merely diminishes the quantity of circulating fluids; hence, we so seldom hear them talk of bleeding till fainting is produced, or some decided abatement of the symptoms; they make a small bleeding now, and another again; they seem never to have dreamed that it is possible, by one bold and free bleeding, to arrest almost all the acute inflammation in the very threshold, and that at a much less expense of the forces of the patient, than when the disease is allowed to run on, or some faint attempts made to arrest its course by insufficient bleedings. After these bleedings, leeches to the anus are, as usual, recommended. M. Boyer speaks in favourable terms of deep scarifications upon the loins, and the abstraction of blood by the cupping-glasses—a mode of local

treatment which we should think applies admirably to the disease in question, as blisters are in a manner proscribed in all inflammations in the urinary passages. The French practitioners insist much more upon a rigorous diet than we do; upon this head, we think it would be well, that we imitated their example somewhat more. The patient should avoid as much as possible the heat of the bed, and reposing on the back. In fine, when it is judged that the resolution of the disease is well advanced, we are to have recourse to such laxatives as promote plentiful evacuations, without causing irritation.

The termination of nephritis by gangrene is rare, but it is observed to be constantly mortal. It is announced by sudden remission of the fever and pain, extreme prostration of the forces, frequent intermittent pulse, hiccup, delirium, cold sweats, continued vomiting, total suppression of the urine, or the excretion of black putrid urine, mixed with small portions of livid flesh. There are few examples of the termination of nephritis by gangrene recorded. Fabricius Hildanus tells us, that his eldest son died at the age of seven years of this disease. After having had headache for two days, this child was seized with pain in the loins, with fever, and suppression of urine. All the means employed failed to procure the flow of the urine, and the patient died on the seventh day. Glandorff, a celebrated surgeon of the time, inspected the body, "and there was found," says Fabricius, "the kidneys and surrounding parts, struck with a strong and remarkable inflammation, degenerated into gangrene." In a gouty patient, aged 62, mentioned by Chopart, death took place on the ninth day from the translation of the gout to the kidneys. This patient had fever, and acute pains in the loins; the urine was scalding, red, and scanty; and was suppressed on the fifth day of the disease. On inspection, the bladder was found thickened, and empty; the kidneys enlarged, red, livid, covered with black spots, and easily torn.

When the inflammatory symptoms are intense, and persist in their intensity after the seventh day, there is reason to fear that ABSCESS will form in the kidney. Diminution of the fever, pulsative pains, and irregular chills, indicate the formation of pus here, as in other parts; but the symptoms are often complicated with affections of the liver, spleen, &c., which renders the diagnosis obscure. Matter sometimes forms in the kidneys slowly and insidiously, especially in those who labour under renal calculi, hardly giving even to the most experienced the symptoms necessary to detect its presence. The abscess may exist in the parenchyma of the kidney, and may burst into the calices and pelvis, and the matter be thus discharged by the urinary passages. More ordinarily, however, the inflammation

affects at the same time the tunica propria, and the adipose substance which covers it, so that the matter occasionally finds its way into the corresponding part of the colon, but more frequently accumulates in the cellular substance in which the kidney is imbedded, forming a tumour between the muscles and the peritoneum, extending into the lumbar region, and sometimes forward upon the sides of the abdomen. It is not always easy to detect matter in this situation, as the thickness of the abdominal walls prevents it from forming any evident tumour, and gives it a direction towards the vertebral column and pelvis, where it is hardly possible to distinguish it, except in very few cases, by laying the patient on his side, and compressing the abdominal walls in different directions, so as to collect the pus more into one spot. When the abscess takes the direction of the loins, we have often distinct tumour and fluctuation, though sometimes the only exterior signs are œdema, and matting of the integument. When, however, together with the general symptom of the intense inflammation terminating in abscess, the patient has a feeling of weight in the affected part, when he reposes on the opposite side, slow irregular fever, consumption, deep-seated pain, and the matting of which we have spoken, there can be little doubt of the existence of abscess of its seat; and as little, that it ought to be early opened. When the fluctuation is distinct, and the abscess not very deep, it should be opened with a bistoury; but when the only external signs are œdema, and matting of the integuments, we ought to employ the caustic potass.

When the abscess bursts into the urinary passages, it generally degenerates into an ulcer exceedingly obstinate to cure, and which is attended by a discharge of a greyish, serous, fœtid, and sanguinolent pus, or whitish, viscid, thick, and mixed with concreted lymph, in the form of pellicles or filaments, and with small portions of flesh. These ulcers are frequently the consequence of calculi: they are rarely susceptible of cure, the patients generally falling into a state of marasmus, and slow fever. In such cases, M. Boyer prohibits the use of the balsams, such as the turpentine and copivy, recommended by some with a view of deterging, and cicatrizing the ulcers, contenting himself with advising the use of diluent and mucilaginous drinks, and good diet. If the disease has persisted long, we usually find, on inspecting the body, the substance of the kidney destroyed, and the organ reduced to a kind of pouch filled with pus, or with a mixture of pus and urine.

The kidney is frequently the seat of different sorts of TUMOURS, which are sometimes of an almost incredible size. A man, aged 45, played violently at tennis, which brought on hemorrhage from the kidneys, which renewed itself always when he

made any extraordinary movements, and severe pains, which continued to the end of his life. Thirteen years before his death, his belly began to swell, and the tumour went on increasing in bulk, even till his death, which took place in his sixty-sixth year. On inspection, an immense tumour was found occupying the belly, and concealing the whole of the viscera, except a portion of the colon, which passed across it like a shoulder-belt. It had elevated the sternum and ribs of the left side, and pushed towards the right side the intestines and spleen, the latter being found imbedded upon the vertebral column. On cutting into the tumour, there issued different sorts of matters; some were yellowish, mixed with minute glandular looking bodies, and with rough calculi, some as large as the end of the thumb; some were thicker, more viscid, of a greenish brown, like the lees of olive oil; others whitish, and of the consistence of honey, or melted glue. At its back part, it contained six pounds of coagulated blood. This tumour weighed 68 pounds, independent of the fluids it contained; it was oval, and its greatest circumference measured 4 feet 8 inches, its least, 3 feet 10. The ureter arose from its superior part, and was directed along the vertebra towards the bladder. The renal artery and vein were greatly enlarged. The right kidney was sound.

A soldier, mentioned by Chopart, in his inestimable work on diseases of the urinary passages, passed frequently pure blood by the urethra, and had for a long time in the left side of the belly, a tumour, which extended equally towards the umbilicus and the groin. It was oval, hard, indolent, and was thought at first to have developed itself in the cellular substance of the peritoneum. By bleeding and leeches to the anus, the discharge of blood by the urethra was arrested. The pains in the tumour having become pulsative, it was imagined that matter was forming, and the usual means to promote this event were employed; however, the tumour continued to augment; the pains became more severe; numbness of all the members, and paralysis of the left lower extremity followed; finally, incontinence of urine, spitting of pus, passing pus with the urine, and death. This tumour was found to be the left kidney enlarged to ten times its natural bulk: it weighed eight pounds and a half, and preserved its natural form. It was presented to the Royal Academy of Surgery. It contained many collections of matter of the colour of wine lees. These collections were separated from one another by cellular partitions; and enveloped in the common membrane of the kidney, which had become thickened.

Another very minutely detailed case of tumour in the kidney is given us, which occurred in the practice of Professor Corvi-

sart, at la Charité. The tumour extended from the right hypochondrium into the left iliac region; it was curved, the concavity looking upwards and the convexity downwards; it seemed formed of many lesser tumours, two of which, the upper and the lower were remarkable; inasmuch as the first extended from beneath the false ribs, occupied the region of the kidney, and was lost towards the umbilicus in the rest of the tumour, while the second, which was exceedingly hard, was situated in the left iliac region. The first was soft and offered some degree of fluctuation. This patient, when a boy, had been struck with a stick upon the right kidney, and he had ever after been subject to pairs in the part which were aggravated by fatigue. At the age of 42 he fell upon the same side, which aggravated the complaints. When admitted into the hospital, the pains in the tumour were acute and darting. Corvisart announced to the students, that the tumour was formed by the right kidney; and mentioned the case of a man whose kidneys were the seat of a serous and lymphatic collection, and on whom puncture of the kidney was practised. Believing, however, that the disorganization was too extensive to admit of relief by any means, he contented himself with prescribing some simple medicines, and the patient died two months after admission. On inspection this tumour was found to have pushed the liver, stomach, and part of the intestine upwards, while the rest of the intestinal canal was below and behind it. Its inferior extremity rested in the left iliac fossa, and filled up almost entirely the entrance of the pelvis. The arch of the colon passed across its fore part. On separating the viscera, it was ascertained to be the right kidney enlarged to forty times its natural size, though still preserving its original form. On cutting into it, seven pints of turbid fluid escaped, and mixed with white flakes, little thickened mucus: this fluid was found to contain much albumen. The interior of the tumour was found composed of cells, which communicated with a common sac, occupying the place of the *sinus* of the kidney: these cells became progressively smaller as they were situated lower down in the tumour, and in the one which occupied the place of the pelvis were four calculi, of the size of nuts, black and polished; but this colour depended only upon a thin coating of dark matter, with which they were as if varnished, and which subsequently dried and fell off in scales, leaving the calculus of a yellowish brown. The ureter ended at the same cell, but its internal mouth could not be discovered. The entire tumour was covered externally by the peritoneum, at its fore, and in a great part of its posterior part. The cyst internally was lined by a reddish membrane, soft, beset with little glandular bodies, covered with viscosities, and which was supposed to be the same mucous

membrane, which in the natural state lines the pelvis and calices. Between these two was found cellular tissue, in some parts abundant, in others rare. The ureter arose from the inferior and internal parts of the tumour; it was dilated to about eighteen lines in diameter: a probe could not be passed into it from the tumour, and the spot where it terminated at the bladder was occupied by a scirrhous, rough tubercle, so as to shut up the opening at this extremity. Internally it was covered with a mucous membrane, a little inflamed. The renal vessels did not appear materially enlarged. The aorta, though pressed upon anteriorly by the tumour, was sound. The walls of the bladder were somewhat thickened. The left kidney was sound, though its ureter was enlarged to about six lines in diameter. (*Journal de Méd. par* MM. CORVISART, LEROUX & BOYER, V. 7, p. 387.)

Another patient, aged 49, treated by Corvisart, in la Charité, had a swelling in the left hypochondria: after experiencing a variety of symptoms and treatment, he died at the end of a month, partly apoplectic. The kidneys were as large as the head of a new born child, and globular; the right extending into the epigastrium, behind the stomach, descended below the superior part of the cæcum; the left extended behind the spleen to the diaphragm, and downwards into the iliac region. They consisted of a mass of vesicles, varying in size, from a pigeon's egg, to fine grains. Some were thin, of the silvery grey colour of aponeurosis, and contained a fluid slightly citrine coloured; others thick, less transparent, contained a brown fluid; others again were quite opake, white, and contained a sort of thin bad pus. All, when opened, offered internally the bright polish of the serous membranes, with a slight reddish injection. They occupied the whole substance of the kidney, without communicating with one another, and externally they were covered by the tunica propria, which was entire. The termination of the tubular substance and papillæ could no longer be recognised, but the remains of the calices were found, and the pelvis in a natural state: the ureters and bladder were also sound, as also the emulgent vessel, till they reached the tumour.—(*Same Journal*, p. 399.)

Ballonius relates that the left kidney of a widow, who died of nephritis, was as large as that of an ox, and contained a little sanies and a small stone. During life it formed a hard tumour in the hypochondrium, which had been mistaken for the spleen in a state of induration. The right kidney was so small that it was with difficulty discovered.

M. Boyer quotes an exceedingly interesting case from the history of the Royal Society of Medicine of Paris. A woman had a tumour in the right side of her belly, which was thought

to be engorgement of the mesentery. After death, however, it was found to be the right kidney forming a soft membranous mass, eight inches long, and five thick. It contained much serum, and four pretty large calculi; and was composed of numerous membranous cells, which opened into one another. To discover the left kidney it was necessary to follow the ureter, which conducted to a small membranous sac under the diaphragm, which contained some cells a little thicker than those of the right kidney; in which was contained a little turbid serum, and a calculus as large as a pea. It was impossible to distinguish the difference of the substances in the two kidneys.

We must not think of quoting more of the instructive cases brought together under the head of tumours of the kidneys, nor, indeed, of the general reflections which M. Boyer hazards upon this highly interesting subject.

Renal Calculi have been observed to form readily in fat individuals, who eat much, and who lie long in bed in a state of health; or, who are compelled to lie long on their back in consequence of such diseases as paralysis, or fractures of the lower limbs. Most of our readers will recal the case mentioned by Van Swieten, of a man who never had experienced any symptoms of stone, but who was attacked with a calculous nephritis, after having lain two months and a half on his back, without changing his position, for a cure of a fracture of the thigh. After suffering severe pains, he passed a small rough calculus by the urethra. It is well known that Sydenham, during confinement for the gout, became subject to calculi. The small rough stones which are moveable in the calices and pelvis irritate these organs, and cause the most lively pains, while those which are large and immoveable, dilate the cavities of the kidneys, alter their organization, destroy their parenchymatous structure, and convert them into cells, containing turbid purulent urine and calculi. But what is very remakable, the kidneys have been found thus destroyed in individuals who never experienced pain, nor passed gravel, pus, or blood in their urine. Bonnet relates that at the inspection of the body of a prince, the right kidney was found as large as a child's head, and contained a stone of three inches and a half in diameter; a large and deep abscess filled with yellow fœtid pus was found under the psoas muscle; and the left kidney, which was enlarged, contained at least one hundred small calculi. During life this person was never known to complain of nephritic pains, to pass gravel, or to have difficulty in voiding his urine.

The symptoms of stone in the kidney are often obscure. Galen tells us, that having felt an acute pain in the track of one of the ureters, he believed that he had got calculus in the kidneys; but the pain having totally disappeared after an injection

of the oil of rue, he abandoned this opinion. Boerhaave committed a like mistake, in attributing the pains of a lumbago to stone in the kidney. Other affections of the neighbouring parts also lead to confusion in the diagnosis of the complaint. Scirrhus, abscess, and stones in the pancreas or mesentery, scirrhus and displacement of the spleen, tumours in the intestines, &c., have been mistaken for nephritis, arising from calculi. Hysteria also often stimulates this disease, presenting pain in the same seat and track, accompanied by suppression of urine, nausea, and bilious vomiting. To prevent mistakes on this head, we ought, according to M. Boyer, to inform ourselves whether the parents of the person were subject to calculi, whether gravel or small calculi passes by the urethra; if the invasion of the pain and the other symptoms has occurred after a severe exercise or a violent shake, and if the urine rendered is red, sanguinolent, or like a decoction of coffee.

The symptoms of calculous nephritis usually come in fits of variable duration, sometimes persisting a few hours only, at others for several days. The urine generally more or less suppressed during the accessions; during the remissions it again flows, but is coloured, muddy, glairy, or gravelly. If the symptoms persist long, inflammation is the inevitable consequence, which if it does not yield to the proper remedies, ends in suppuration and ulceration of the kidney. The patient has then irregular fever, successive heats and chills; his urine is troubled, scalding, and loaded with pus and mucus. It has been observed that if, in such a case, the urine becomes clear and limpid, these pains, feeling of weight in the loins, and other symptoms are redoubled until the discharge of the pus be re-established.

Renal calculi are always most troublesome in people advanced in years, because the gravel is apter to be retarded in the renal cavities, and to increase rapidly in consequence of the great superabundence of uric acid in the urine of old people. They are also more dangerous in sanguineous, bilious, melancholy, and very irritable individuals, than in others. The danger is still greater when the accessions are intense and return at short intervals. Indeed, when there is passing of blood and pus in the urine, with slow fever, it is seldom that the disease fails ultimately to end fatally, though the sufferings of the patient are ordinarily protracted through a long period.

At the first accession of a calculous nephritis, we are recommended to bleed freely, and employ scarifications, or leeches over the region of the affected kidney, to prescribe diluent and mucilaginous drinks, such as decoction of linseed, with nitre dissolved in it; with baths and embrocations. M. Boyer speaks highly of a liniment composed of an ounce of almond oil, half

an ounce of laudanum of Rosseau, and half an ounce of althæa ointment, rubbed over the loins, repeated every two or three hours, and the parts afterwards covered with two or three folds of flannel, dipped in a decoction of poppy heads. After the bowels are evacuated, emollient injections retained in the intestines are found to be useful. M. Boyer prohibits all active diuretics and purgatives during the accession. If suppuration takes places, however, we are to determine the pus towards the urinary passages, by means of active diuretics, taken in large doses. For ourselves, we are totally at a loss to perceive the utility of this treatment, for if the abscess has any communication with any part of the urinary passages, the pus will make its way into the bladder, independent of the irritation of active diuretics, and if it does not communicate with these passages we are at a loss to perceive upon what principle M. Boyer thinks that diuretics will establish this communication. Ulcers, as we have said, usually succeed to abscess, and are said by Boyer to be next to incurable; but in complication with these ulcers, we have also sometimes abscess forming in the region of the loins or ileum. When the purulent matter is confined within the pelvis or calices of the kidney, it never produces evident tumour externally; but what occurs most ordinarily, is that the inflammation excited by rough, unequal stone, extends even to the surrounding cellular tissue, in which the kidney is imbedded, produces suppuration there, disorganizes the already inflamed and ulcerated kidney, so that the stone comes to be lodged in the midst of an abscess, which forms between the peritoneum and abdominal muscles, and sometimes presents a tumour in the region of the loins, in which fluctuation is felt, and which, according to Boyer, and indeed, all experienced surgeons, ought to be opened, and the stone and matter evacuated. It has been proposed to cut into the kidney, and extract calculi, if, even when no abscess had formed, the symptoms of their pressure were quite certain; but the difficulties and risk of such an operation are so manifest, that no man of ordinary sense and humanity will readily undertake it.

There are some examples recorded of abscesses of the kidney bursting spontaneously, and the calculi being thus discharged; but these cases ought not to deter us from opening such abscesses as soon as we are certain of fluctuation, as the prolonged lodgment of the matter only augments the disorganization of the kidney, and is apt to form intractable sinuses in the surrounding part. When the accumulation of pus and urine is confined to the substance of the kidney the practice is doubtful, and the existence of the abscess seems difficult to determine. One of the principal signs is a doughy or œdematous feel of the integuments, but it is by the comminative and rational symp-

toms chiefly that the surgeon is to judge; but we presume to think, that it will be rare indeed, that any thing like certainty can be attained on this head; and even though the surgeon is certain of this deep-seated abscess, we think it would be a better practice, unless the symptoms were very urgent indeed, to attempt to bring the matter nearer to the surface before making any attempt at opening the abscess.

To prevent the formation of renal calculi, M. Boyer recommends the daily use of mild diuretic drinks, mixed with a very small quantity of white wine, which usually renders the urine clear, and almost aqueous. It has been observed, that if those persons whose urine deposits a great quantity of very fine red sand, take 20 or 30 grains of calcined magnesia, on going to bed, that the urine in the morning will be much more clear and limpid. But the use of the magnesia must be continued perseveringly to have any lasting effect.

The presence of WORMS in the kidneys of several animals, and among others, man, is a fact which has been repeatedly observed. Dogs, however, seem to be more subject to them than any other animals. Morgagni tells us, that Valsalva, enamoured with the study of anatomy, dissected a dog, in which he found a body resembling a kidney exteriorly, but which contained under its external membrane a thin glandular shell, under which was a cavity, lined with a smooth membrane. In this cavity was a worm, three ells long, and larger than an ordinary writing pen. Blasius found in the kidney of a very meagre old man, two worms of the length of a cubit, reddish, distended with watery fluid, and which seemed formed of a number of rings jointed together. Lusitanus mentions his having seen in a military hospital in Spain, a robust young man, who was subject from infancy to severe pain in the kidneys, and who died in a state of marasmus. The body was inspected in the presence of many physicians, and some living worms were found in the kidneys, of a light green colour, and half the length of the index finger. As to the numerous instances recorded of worms issuing by the urethra, Morgagni observes, that most of them were mere polypus concretions, and that others were not produced in the urinary organs, but had got thither by perforating the intestines. Thus, James Spon mentions the case of a merchant of Lyons, who, after the ordinary symptoms of a nephritis, passed a large quantity of bloody urine, at the bottom of which was found a body a foot long, which was at first mistaken for a worm, but which a more attentive examination discovered to be altogether similar to the polypi, which form in the cavities of the heart. Kellner also gives the history of a man, who, after acute pains in the loins, extending to the pubis, and violent tenesmus of the bladder

and rectum, passed a body, which was at first taken for a lumbricus, but on a more minute search, Kellner found that it was nothing else than coagulated blood, contained in a kind of thin tunic.

A very curious case is recorded by a M. Moublet, in the *Medical Journal* of Paris, Vol. IX. A child had an abscess in the right lumbar region, which was opened, and much pus, mixed with blood, was discharged. The discharge continued abundant for twelve days, and after a considerable lapse of time, the wound healed. Some months after, however, the cicatrix became soft, swelled and fungous, with pain and tension in the neighbouring parts. The urine became suppressed, and the child fell into convulsions. The cicatrix was laid open, and a new flow of pus took place, after which the symptoms disappeared. The opening became ulcerous, and after a time again closed, and again required to be opened, when it remained fistulous. In fine, the child's mother one day examining the fistula, perceived a living worm in it, which she drew out, and preserved to show to the surgeon. This worm lived afterwards three years. The surgeon the same day extracted another, also alive, which was four inches long, and the size of a goose's quill. Two days after, the child could not pass his water, and the bladder was tense. M. Moublet attempted to introduce a catheter without success; he injected some tepid oil into the urethra, with a view to facilitate the issue of the gravel, which he suspected intercepted the passage of the urine, and put the child into the warm bath. On again attempting the sound, he perceived a foreign body at the extremity of the urethra, which he seized with a pair of forceps. He found it to be a worm, in life, of the length and figure of those which had been withdrawn from the fistula. On the following night, the child passed another, after which the urine flowed easily, and the child got completely well. M. Boyer believes that these worms were lumbrici, and were engendered in the intestines; and that the fistula by which these two first were discharged, did not communicate with the kidney.

Two species of RENAL HYDATIDS have been recognised by authors; the first, known by the name *ageticus hydatiformis*, is nothing else than a serous cyst, situated usually in the thickness of the tunica propria of the kidneys; the other consists in lymphatic vesicles, single or in clusters, free in their circumference, and which are regarded as being actually animated.

The first are met with very often in old people; they are thin and transparent, and contain usually a colourless fluid, though in some cases given by Morgagni, it was reddish, and had a urinous smell. Often they increase so much, and press so much upon the substance of the kidney as to destroy it; and

when this takes place in both kidneys, the patient almost always perishes with an ascites.

The live hydatids are said to be met with in the mammiferous animals only; sometimes they are found in the substance of the different organs, upon its surface, or under its proper membrane, in the interstices of the muscles; but they are never found floating freely in the intestines, or any other natural cavity, being always enclosed in cysts, which separate them completely from the substance of the organ which contains them. Sometimes these cysts are simply membranous pouches, and contain the hydatids in greater or less numbers: contained in great numbers in one cyst, is the state they are usually met with in man. The cysts may acquire an enormous volume, and be quite gorged with hydatids, or they may float freely in the liquid which the cyst contains. When very closely heaped together, they generally destroy or decompose one another, and then it is impossible to ascertain their primitive organization; whence, probably, have arisen the numerous doubts with regard to the vitality of these animals.

Hydatids are rarely met with in the kidneys; sometimes they are found adhering to the internal membrane of the calices, pelvis, or ureters, where, as they augment in bulk, they are detached, and are expelled with the urine, some in an entire state, others broken, and presenting nothing but the remains of a vesicular bag. When too large to pass along the urinary passages, they accumulate in the pelvis and calices; dilate and change in some sort the organization of the kidney, its parenchyma being compressed, thinned, or even totally destroyed, so that what remains of this organ is a mere cyst, filled with urine and hydatids. Such a degree of disorganization cannot occur without giving rise to nephritic pains, retention or difficulty to pass urine, and the other symptoms which characterize calculous nephritis; at the same time, it is impossible to pronounce any certain diagnostic, unless hydatids have passed by the urethra. M. Baumes recommends anthelmintics and mercury against hydatids; but, according to M. Boyer, we can do little in this complaint, unless we instigate the symptoms by warm baths, mild diuretic drinks, and so forth; cases of cure of persons who were known to have hydatids in the kidneys, are extremely rare.

The URETERS are subject to stricture, dilatation, spasm, inflammation, and calculi. If the urine passes not at all, or but in small quantity along the ureters, they become spontaneously constructed like all the other excretory ducts. When a stone also gets engaged at their origin, so as to intercept the course of the urine, we have the same result, in all the parts between the stone and the bladder, while the part above is preternaturally

dilated. Meckel records the case of a woman in whom the kidney was found changed into a small fleshy mass, in which the tubular part was altogether wanting, and the ureter was converted into a solid membranous cord, without any cavity. The right kidney was double its renal size, and contained fourteen calculi, the largest of which occupied the pelvis. In a woman, inspected by Morgagni, one of the kidneys was wasted, but its pelvis enlarged; the other kidney was enlarged; its pelvis, also, was more capacious than ordinary, but the ureter was so much constricted, that air was with difficulty blown through it.

Stricture of the ureters may result from acute inflammation, or from the callous thickening of their walls, which chronic inflammations sometimes occasions. Scirrhus of the rectum, also of the uterus or ovaries; excessive distention of the largest intestines; the gravid uterus; in short, any cause which may exercise permanent pressure upon the ureters produces their constriction, and consequent retention of the urine in the cavities of the kidney. Obliteration is sometimes a fault of conformation. In a fœtus mentioned by M. Boyer, which died during labour at the full time, the ureters from the bladder, to within an inch of the kidneys were hollow cavities as usual, and about a line and half in diameter, but the remaining inch formed an impervious cord, not thicker than the fourth of a line. The kidneys were larger than ordinary, and on removing the tunica propria, the substance of the kidneys was found in great part composed of membranous vesicles of different sizes, round and oval, and filled with a thick watery fluid, possessing a urinous odour.

Excessive dilatation of the ureters is almost uniformly the consequence of obstruction by means of calculi, pus, clots of blood, hydatids, &c., to the passage of the urine from the ureters into the bladder. Stricture of the inferior part of the ureters causes accumulation of urine, and consequent dilatation of the portion between the stricture and kidney. Thus, Chopart relates the case of an individual, in whom the vesical openings of the ureters were strictured, while the rest of their extent was as large as the finger; the bladder was empty and thickened, and the calices and pelvis much dilated by the urine which they contained. According to Petit, if the obstacle to the course of the urine exist at the neck of the bladder, or in the urethra, all the urinary passages are successively dilated; the valvular construction of the termination of the ureters resisting only to a certain point. In an old woman who died with the urinary organs thus gorged, Morgagni pushed air into the bladder, which escaped by an incision made into the pelvis of one of the kidneys. In some cases the orifice by which the ureters termi-

nate in the bladder, are excessively dilated. In Chopart's work we find the case of a lad, aged 19, who had stone in the bladder, and who complained of great difficulty in making water. Pelletan introduced a catheter, but without feeling any stone; he had great difficulty in moving the instrument in the bladder. There issued only about half a glassful for 24 hours. The same day, at mid-day, another surgeon introduced the catheter, and a pint of clear urine was withdrawn. The patient died, and some dispute arose as to the cause of the difficulty which M. Pelletan had experienced in moving the instrument in the bladder. M. Pelletan thought that the instrument had been engaged in the orifice of one of the ureters; others *charitably* supposed that he had made a false passage. On inspection the bladder was found large, although it contained almost no urine; its walls were nearly an inch thick, and a calculus, as large as a hen's egg, was found lodged near its neck. The orifices of the ureters were so much dilated, that they received the end of the finger with ease. In another case, from the same work, Pelletan says that, having introduced the sound, for the purpose of performing lithotomy upon a child, in whom the presence of a stone had been previously established beyond doubt, he was unable to feel any foreign body, although he used every contrivance for that purpose. After some days he proposed again to sound the child, but this was obstinately refused. After some time the child died, and, on inspection, the stone was distinctly felt across the thickened walls of the bladder. M. Pelletan then introduced the sound, and having raised the intestines, he found that it had passed into the right ureter, which, as well as the left, was more than an inch in diameter. On cutting open the bladder, the orifices of the ureters were found so large as to admit the little finger. The stone was of immense size. In those cases where the presence of a calculus has been ascertained, and where we fail to strike it in consequence of the instrument passing into the dilated orifice of one of the ureters, M. Boyer advises us to employ a sound very much curved, and of which the beak is somewhat elongated, and to carry it forward directly in the middle line of the abdomen, with the handle a little depressed upon the thighs.

The dilatation of the ureters is sometimes carried the length of forming a tumour externally. Dèsgrange reports the case of a lady, who, some years after labour, became dropsical, with dull, gravitating pain in the left iliac region. After some time, a slight circumscribed swelling was perceived there, in which there was obscure fluctuation. This was thought to be dropsy of the left ovary. Sometimes the humour disappeared, or became much less; at others it increased greatly. The patient complained of occasional difficulty in passing water, and ulti-

mately died. On inspection, the left ureter was found forming a tumour, which extended along the psoas muscle, from the sacro-iliac symphyses to nearly as high as the kidney. On compressing this tumour, a little stringy part of the fluid which it contained, flowed into the bladder. Its walls were thick, reddish externally, and of a membranous texture, and lined by a smooth membrane within. At the point where the ureter bends a little outwards to pass into the pelvis, the ureter became of the natural size, and at this place presented a circular fold of its internal membrane, which performed, in some degree, the office of a valve. The orifice by which the ureter terminates in the bladder was either not examined, or no morbid appearance was observed.

These tumours may be mistaken for chronic abscess, but if by pressure we can employ them, and the desire to void urine follows, we may be pretty sure of their nature. The other symptoms of a urinary affection ought at the same time to be taken into account. A man, aged 45, was admitted into la Charité, for a contusion of the thigh. He had the left testicle indurated, but he never had experienced difficulty in voiding the urine, or pain in the region of the kidneys. On examining the left iliac region a tumour was felt, which was painful on pressure, and habitually accompanied with a dull pain. M. Boyer, believing that it was engorgement of the cellular tissue which surrounds the spermatic vessels, applied emollients, and it augmented insensibly, so as at the end of three months to elevate considerably the abdominal parietes. Laterally, it extended from the last false ribs to below the crest of the ilium; it was of an oblong form, and larger superiorly than inferiorly, and evidently contained a fluid. As the patient had never experienced any symptom of a urinary affection, M. Boyer was led to believe it to be a chronic abscess, and accordingly he opened it, and gave issue to three pounds of a citrine coloured liquid, which was ascertained by analysis to be urine. The puncture healed in 24 hours, and at the end of 15 days the tumour was as large as before. A second puncture was made with the same results, except that the wound degenerated into a fistula, by which the urine continued to flow. After three months the patient died, and the fistula was recognised to communicate with the ureter, which was enormously dilated, and its walls at least three times in thickness. The enlargement was greatest towards the kidney, and went on diminishing towards the bladder where the ureter became ligamentary, and structured so as to admit with difficulty the point of a very fine probe. These affections are regarded by M. Boyer as incurable, and opening the tumours he thinks can only accelerate the death of the patient.

Stones are rarely formed in the ureters; M. Boyer believes

never, unless some foreign bodies have accidentally got there, as was the case with a soldier who died in the hospital at Lille. This patient had fever, tension of the stomach, and acute pain in the right side of the epigastric region, where an inflammatory fluctuating tumour at last appeared, which being judged to be an abscess was opened, and pus of a bad odour followed by urine flowed out. The urine continued for a long time to flow by the opening: the patient died, and on inspection the epiploon was found destroyed, the right ureter ulcerated, filled with pus, and containing a pin incrusted over with calculous matter.—When the renal calculi are large or pointed, they pass with difficulty along the ureters, produce intolerable pains, and sometimes even are arrested there. Le Dran found on opening the body of a woman the ureter so much dilated as to contain about three ounces of sand and small calculi, through which the urine filtered. A single calculus is sometimes found at the superior part of the ureter. Tulpius gives us the drawing of a large oval calculus which he removed from the pelvis of the left kidney of a woman aged 40, the pointed extremity of which projected into the superior extremity of the ureter, and completely intercepted the passage of the urine. But the part of the ureter where calculi are more usually arrested is at the oblique part, where it traverses the coats of the bladder, and here the stone sometimes projects into the bladder, so as to be felt by the sound. Calculi, even as large as small nuts, often make their way from the kidney into the bladder in a very short time, and without producing much pain, fever, or ischuria. Ordinarily, however, if the stone is large or pointed, there is severe pain extending to all the urinary organs, and the thigh of the affected side; retraction of the testicles, the pulse hard and frequent; the patient has spasms, even sometimes convulsions, dysuria, and strangury. If the stone does not pass speedily into the bladder, the inflammation produces abscesses in the ureters and kidneys, ulceration, and often death.

Analysis of the Article "Extraordinary Cases," in the Dict. des Sciences Medicales.

(From the Medico-Chirurgical Review for September, 1823.)

"Apparent rari nantes in gurgite vasto."—VIRG.

CONSIDERING how small a proportion of our Medical Readers can peruse, or have access to, the colossal work abovementioned, we trust that in condensing a very curious Article entitled "EXTRAORDINARY CASES" by M. Fournier, we shall

merit the approbation of a great majority of the friends of this publication.

M. Fournier declares, that he has made a very scrupulous selection of facts for this article, rejecting all histories of cases that are not attested by unquestionable authorities. He divides the "cas rares" into three classes or sections, as they affect the anatomical structure—the physiology or functions—and, lastly, the laws of the animal economy.

First Section.

M. Fournier remarks, that of all organs or parts of the body, the brain is found to be least frequently in a state of aberration from natural structure, independent of disease. The relative *size* of this organ, therefore, occupies the first pages of the article. Dr. Louis Valentin has published the description of a cranium, very remarkable for its dimensions, which is preserved in the cabinet of Natural History at Marseilles. The man's name was Borghini, who died in the abovementioned city in 1616, at the age of 50 years. He was but four feet in height, yet his head measured *three feet* in circumference. The bones were thin, and there was an opening, the size of a crown-piece, where the sagittal meets the coronal suture. Dr. Valentin facetiously remarks, that although poor Borghini had so much *brain*, he had very little *wit;*—so little, that it became proverbial at Marseilles to say to any stupid fellow —"You have no more wit than Borghini!" When he became advanced in years, he was obliged to have a cushion on each shoulder to support his head.

2. The next case is a Moor at Tunis, whose head was of such a prodigious size, that people gazed at him wherever he went. His nose was four inches long, and his mouth was so capacious, that he could bite through a melon with the rind on, as easy as another person could bite through an apple! This man was also imbecile.

3. The third was *Philip Sormet*, a native also of Marseilles, and who died there in 1807, aged 71 years. He had a prodigious head. He never lay down in a bed for thirty years before his death, nor ate more than one meal a day. He was not, however, quite so stupid as his townsman Borghini, for he was a great compiler, and also a *critic*. His voluminous manuscripts were found, after his death, to be entirely extracts from authors, (his criticisms were always verbal,) which he had been compiling, or rather *piling*, from every book which came in his way. He used to pass by Borghini's head every day in the public library, but affected to take no notice of it. He

would there collect around him forty, fifty, or sixty volumes, and often go to sleep among them with the pen in his hand.

4. The fourth was a young man at Lucca, whose head was more than *three feet* in circumference, and face fifteen inches long! The rest of his body was well proportioned, and his intellectual faculties remarkably bright. He died of apoplexy at the age of thirty.

5. Passing by several not very interesting cases of aberrations from Nature, in the hair and eyes, we have the description of a curious Cyclopean monster by Eller. In 1755, a child was born with an enormously large head and frightful visage. In the middle of an ample forehead was an only eye, large but without eyebrows or eyelids, and above the eye was a thick cylindrical excrescence, resembling a penis, with urethral canal, prepuce, and glans!

6. There is nothing very worthy of notice among the cases of peculiarity of structure in the ears, nose, and mouth. Two curious instances of very long tongues are brought forward, and they were in *females*. M. Fournier saw a woman at Berlin, whose tongue was amazingly large, but thin as a cat's. When this woman laughed, her tongue covered the whole of her mouth, and hung out like folds of drapery. It was always cold, and communicated a most frigorific sensation to the hand of another person. The same author knew a handsome young woman, fifteen or sixteen years of age, who, although she had a long neck, could extend her tongue to her breast without stooping her head!

7. A third case is related of a young Portuguese lady, who, instead of a tongue, had only a small eminence resembling a nipple. This eminence had a slight contractile and expansive motion, and yet this young lady contrived to *speak* distinctly, though she was forced to use her finger in pushing the chewed aliment back towards the pharynx to be swallowed!

8, 9, 10. Morgagni mentions a man in whom the epiglottis was wanting, though he spoke and swallowed without difficulty. Vicq. D'Azir relates a case of a man in whom there was a dilatation of the œsophagus resembling the crop of birds. In swallowing, the food passed into the sac, and there remained till he vomited it up; this man died exhausted. A young woman had a difficulty of swallowing from her infancy. Towards the period of menstruation, it got worse, and the disease increased rapidly, and was always aggravated by exercise. At length deglutition became impossible, and the poor young woman died. On dissection, the cause of the malady was found to be an aberration in the course of the subclavian artery, which passed *between* the trachea and œsophagus, compressing the latter, and preventing deglutition.

11, 12. Diemerbroeck dissected a subject in which the diaphragm and mediastinum were entirely wanting; and where the lungs formed but one lobe. M. Fournier himself examined the body of a soldier, who had been killed in a duel, and in whom the heart occupied the right side of the thorax, and the lungs (in one lobe) the left. The stomach and intestines were naturally situated, but the liver was placed in the left side. Telasius asserts, that he dissected a Roman soldier, in whom there was not a vestige of *heart* to be found! However *heartless* a set the degenerated inhabitants of the "eternal city" may now be, we think M. Fournier might have placed this among the "*fabulous* extraordinary cases."

13. Passing over a long list of females who had three, four, and even five breasts, we come to a curious malformation in the body of an officer who was opened, and where the whole of the stomach and part of the colon were found in the left cavity of the thorax, into which they had passed through cartilaginous rings in the diaphragm that adhered to these viscera as they entered. The colon, after entering the thorax through the left side of the diaphragm, returned through an aperture in the middle of that muscle, and then pursued its usual route. The right cavity of the chest was filled with water, (the lung being wasted) and the heart was much enlarged.

14. An *adult*, who died of dropsy, was opened. The liver and spleen were entirely wanting. The vena portæ opened immediately into the inferior cava. "We have nothing analogous to this case," says Fournier, "upon record, but the authority of *Lieutaud* prevents us from rejecting it as suspicious."—Granting that this was the case, it does not detract from the importance of the *hepatic* functions, in the animal economy, any more than the case of the Roman soldier proves the *heart* to be an unnecessary organ in the human frame.

15. The following case is so remarkable, that we shall translate it verbatim.

"*A girl, 14 years of age, well grown, and of a beautiful figure, had neither genital organs nor anus, nor any vestige of them, the parts where these are usually seated being covered with natural skin. This young person ate with an appetite; slept well; and enjoyed excellent health. Every two or three days she felt, in the umbilical region, a deep seated pain accompanied by an increasing uneasiness, till at length she vomited fœcal matter. From that moment the pain and uneasiness would cease, and after washing the mouth carefully, and chewing some aromatic substance, the disagreeable smell of the excrements would subside.* The urine was evacuated from her breasts. *It would have been desirable to observe this girl at the epoque of the commencement of the catamenial period, to see by what means Nature would deliver herself from the menstrual fluid, or what accidents would happen from its retention in the uterus.*"

16. M. Fournier relates the case of a woman, 22 years of age, whom he found to have the anus imperforate from birth. The rectum opened without any sphincter into the vagina.

17. Zacutus Lusitanus relates the case of a child who was born with a membrane over the anus, and passed the excrements, per urethram, for three months, when the natural passage was established, and the fæces gradually resumed their proper course. Several other well attested cases of the fæces passing, even for years, through the urethra, are related, but the above specimen is sufficient.

18. A man was dissected by Lieutaud, in whom the urinary bladder was wanting. The ureters were as large as small intestines, and terminated at the lower part of the pelvis, in the urethra. He died at thirty-five.

19. A man, aged 32, passed his water by the navel. It came out with a jet, as though a sphincter existed there.

20. Lieutaud relates a case, (the only one on record,) where no vestige of a womb was discovered on the dissection of a woman. *Coitus erat difficilis.*

21. Professor Lobstein, of Strasburgh, dissected a woman who had two distinct wombs. He thinks that where there is a superfœtation or double conception, there must be two wombs, as above.

22. A single woman of *fourscore* years of age, had the hymen nearly circular, with only a small perforation in the middle! It is preserved (as one of the greatest curiosities in all *France*) by M. Sue, Member of the Academy of Surgery. M. Fournier says, this is a most surprising phenomenon, since the hymen is so early destroyed, in general, by the most *innocent introductions.*

23. Vallesnieri dissected a female in whom were found two uteri; the orifice of one opened into the vagina, of the other into the rectum. M. Fournier says, there is no doubt but that *coitus per anum* would have been followed by conception. He grounds this opinion on the curious case related by the celebrated Louis, of a young lady who had a congenital imperforation of the external organs of generation. This girl menstruated per anum. She was solicited in marriage by a young man to whom she was attached. After much resistance she confessed to him the secret.—In the delirium of his passion, he supplicated her to consent to their union in the only practicable way; to which she consented, became pregnant, and was delivered of a well formed child per anum. Louis made this the subject of a thesis, and was prosecuted by the parliament of Paris; and the doctors of the Sorbonne *interdicted* him for addressing to the casuists the following question:—"In uxore, sic disposita, uti fas sit, vel non? judicent theologi morales."

The Pope, however, more philosophic than the Parliament or the Sorbonne, gave absolution to Mons. Louis, and his Thesis was published in 1754.

From the Cases of Hermaphrodites we shall not select any, since M. Fournier is of the same opinion with the physiologists on this side the water, that they are all merely *imperfect* males or females, chiefly the latter, and never conjoining the two sexes in one.

At the end of hermaphroditism, it is asserted, on the authority of Hufeland, that the body of a child, three years of age, was lately opened at Berlin, in which there was not the slightest trace, either internally or externally, of any part of the genital organs peculiar to either sex.

We have next a dissertation on those causes which change the colour of the human skin, and on *nevi materni*. M. Fournier believes, contrary to Richerand, and most of the physiologists of the present day, that strong impressions on the mother, during pregnancy, will indubitably occasion nevi materni, though the vulgar have exaggerated the circumstance by attributing every trifling mark to causes of this kind. His remarks on Albinos have nothing novel in them.

M. Fournier concludes the first section of this article with the description of a man, who lately died at Paris, and was examined by the School of Medicine, from whose procés verbal the details are taken. Marc Catozze, commonly called the little dwarf, was born at Venice, of robust parents, and had several brothers, strong and well formed. He died a few years ago at Paris, aged sixty-two years. The trunk of the body exhibited nothing remarkable, and appeared to belong to a person of about five feet six inches in height; there was, however, no scrotum. The upper extremities consisted of merely two prominent shoulders, to which were attached two hands, without either arms or fore-arms. The lower extremities consisted of a flattened buttock, to which were appended two ill-formed feet, without thighs or legs. As Catozze could not feed himself, or bring his hands to his mouth, Nature had furnished him with a curious under jaw, which he used as an elephant uses his proboscis. At least, with this he managed his victuals very well. Catozze was very fond of women, wine, and good cheer. He was also fond of society, and spoke and wrote several languages. On dissection, several peculiarities were observed in the interior of the trunk, but they need not be recorded here.

Section II.

Or, Singular Aberrations from the Natural Functions and Actions of Life. This Section is alphabetical. It commences with abstinence.

1. On the authority of Vanderviel, a madman, who conceived himself the Messiah, totally abstained from food and drink during a space of *seventy-one days!* All that he did was to smoke and wash his mouth. His health was not impaired. He passed no excrement in that period. Credat judeus!

2. In the Memoirs of the Academy of Sciences for the year 1761, another case of abstinence is related, which lasted *four* years, accompanied with very curious circumstances! Scepticism and credulity are, they say, frequently united!

3. Extraordinary lactation.—In the year 1810, a poor woman, of the name of Charles, was delivered of male twins; but being of a weakly constitution, and unable to suckle them both, she applied one of them to the breast of his *grandmother*, aged 65 years, and in the twenty-ninth year of her widowhood. The above is on the authority of Dr. Montegre, who has published the circumstance in the Gazette de Santé.

4. A case of catalepsy is related by M. Fournier himself, and which was caused by the suppression of an habitual diarrhœa. This diarrhœa had continued five years, (having succeeded the cessation of the menses,) during which time she enjoyed excellent health otherwise; wishing, however, to get clear of the diarrhœa, she applied to a Charlatan, who gave her strong astringents, which suppressed the intestinal flux, and instantly brought on a cataleptic fit. M. Fournier was called in, and by purgatives, &c. restored the accustomed evacuation, and removed the catalepsy.

5. Cabrol, relates the curious, but dreadful effects of cantharides, taken as an aphrodisiac. A man swallowed *two drachms* of this active medicine, and afterwards effected coition eighty-seven times in one night! besides several seminal emissions. Death was the consequence.

6. Several cases of spontaneous human combustion are next related. M. Fournier observes at the close, that the fact of spontaneous combustion is now so indubitably proved, that scepticism on the subject would be unreasonable.

7. After the details of an extra-uterine conception, a case is related, where a fœtus was found in the abdomen of a child. A similar case is related in one of the volumes of the Medico-Chirurgical Transactions. A girl of 14 years of age, died of a pulmonary consumption; but had had from infancy a painful

swelling in the left side. On dissection, a fœtus, imperfect in some of its parts, was found in a cyst attached to, and communicating with, the transverse arch of the colon. The French physiologists conceive, that in these cases, the containing and contained animals are congenital—viz. brothers or sisters.

8. Passing by several cases of extra-uterine conception, and among others, one where the fœtus, in two or three successive abortions, was brought forth by the mouth, we come to a curious case of constipation, where the man who was so affected, had fæcal evacuations every Wednesday only, and that from his infancy. He suffered no inconvenience. The other excretions were rather more copious than usual; the fæces were well formed, and in considerable quantity when passed on the day above-mentioned.

9. A gentleman is now living in Paris, in the 50th year of his age, whose intellectual faculties are of the first order, and who is intimately conversant in every species of literature. His style is so elegant that he is the delight of his readers, while his critical acumen is dreaded by every mediocre author, whose works come under his sensorial lash. His person is tall and meagre, his complexion pale and bilious. He may be said to sleep none—at least, he does not sleep more than a quarter of an hour in the course of the night. When he sleeps four or five hours, it is the certain precursor of a fit of sickness, which never fails to assail him in the course of twenty-four hours after this unusual somnolescence. He never passes a stool oftener than once in twenty-five or thirty days, and that by the aid of glysters. Purgatives have no effect on the stomach or bowels; his excrements are like little stones, in the form of sheep or deer's dung. He has no appetite, and eats very little. When ill, he will not eat any thing for a month together, living entirely on drink. He takes great exercise, walking sometimes above an hundred leagues, almost without resting; and it is at these times that he enjoys the best health. He is highly irascible on the least contradiction, but the goodness of his heart is never altered.

10. One of M. Fournier's most intimate friends, arrived at the age of 48 years, without drinking any liquid. He ate, however, voraciously. He was never of course thirsty. For some indisposition he was twice bled, immediately after which he was seized with *hydrothorax*, and died.

11. Several instances are related of *rumination* in the human subject, similar to the rumination of animals; but they are unworthy of notice.

12. *Sweating of Blood.*—A woman, 46 years of age, had been subject to periodical hæmatemesis for a considerable time, for which strong astringents were imprudently administered,

when the hæmatemesis suddenly disappeared, and was succeeded by diapédèse, or sweating of blood, which proceeded from all parts of the body in succession. It became periodical like the hæmatemesis.

13. Under the head of particular idiosyncrasies, the hæmorrhagic disposition of a female named Smyth, in America, and her descendants of the male line, is related; but as this idiosyncrasy has been noticed in our own journals, it need not be repeated here.

14. Among the instances of longevity, PARR is not mentioned, but Henry Jenkins is said to have lived to the age of 189 years, and to have died in 1690.

15. M. Fournier relates the case of a *man* who *menstruated* regularly per urethram.

16. The following case, attested by the principal physicians and surgeons of Brest, must cast in the shade that of the *knife eater*, whose dissection excited so much curiosity, a few years ago, in this country.

A galley slave died at the Naval Hospital of Brest, of a complaint in the stomach, attended with cough and colicky pains. On opening him, the stomach was seen occupying the left hypochondrium, the lumbar and iliac regions of the same side, and stretching down into the pelvis. It was of a long square form, and contained the following substances; viz. a piece of a stave *nineteen inches long* and half an inch in diameter; a piece of a broom-stick six inches long, and half an inch in diameter; another piece of the same eight inches long; ditto six inches long; twenty-two other pieces of wood, of three, four, and five inches in length; a wooden spoon five inches long; the pipe of an iron funnel, three inches long and one in diameter; another piece of funnel, two inches and a half long; a pewter spoon entire, seven inches long; another three inches long; another two inches and a half long; a square piece of iron weighing nearly two ounces. Various other articles, among which were nails, buckles, horns, knives, &c. the whole weighing about twenty-four English ounces. This poor creature was deranged in his intellects—a great glutton; and when he could not procure victuals to satisfy his voracity, he swallowed indigestible substances, as above, to lull the painful sensations of hunger. This case is attested beyond all doubt.

17. Passing by the famous Bijoux, who lived at the Royal Menagerie, and amused himself in classing animals by the forms of their excrements, we come to a singular personage, well known in Paris, where he died a few years ago, and was named *Tarrare*. This man's voracity would stagger all belief, were not the truth of the circumstances guaranteed by the most unquestionable testimonies, among which it is only necessary

to mention Professor Percy. At 17 years of age Tarrare weighed only one hundred pounds, and yet he could devour, in the space of twenty-four hours, a quarter of beef as heavy as his body! At the commencement of the revolutionary war he entered the army, but here he was so scantily supplied with food, that he soon got ill, and was conducted to the military hospital at Soultz. On the day of his entrance he got four rations, which only serving to whet his appetite, he devoured every kind of refuse victuals in the ward, then searched the kitchen, dispensary, &c. devouring every thing, even the poultices, that came in his way! In the presence of the chief physician of the army, Doctor Lorenze, he ate a live cat in a few seconds, leaving nothing but the larger bones! In a few minutes, he devoured a dinner prepared for fifteen German labourers, and composed of various substantial dishes. After this *tiffin*, his belly appeared like a small balloon! As the French in those days turned every thing to account, the commander in chief had him brought before him, and after treating him with thirty pounds of liver and lights, he caused him to swallow a small wooden case, in which was enclosed a letter to a French officer, then in the hands of the enemy. Tarrare sat off, was taken prisoner, beaten and confined. He passed by stool the case with the letter, before he could see the officer, but immediately swallowed it again, to prevent its falling into the hands of the enemy. In another hospital where he was confined, the nurses frequently detected him drinking the blood which had been drawn from the sick; and when all other sources failed, he repaired to the dead-house, and satisfied his frightful appetite on human flesh. At length a child of fourteen months old disappeared all at once, and suspicions falling on Tarrare, he also disappeared for four years, when he was recognised again in the civil hospital of Versailles, where he ended his miserable career. Tarrare's voracity far exceeded that of the French prisoner taken in the Hoche last war, and whose gluttony is attested by the late Dr. Johnstone. Indeed Tarrare seems to have realized the fable of *Erisichthon*, who, according to the poet, devoured what would have supported a whole town—a whole people:

> ——"quod urbibus esse,
> Quodque satis poterat populo."—Ovid. Met. Fab. 18.

18. Two instances of precocious puberty are next related. The male instance is not more remarkable than the one lately published in the Medico-Chirurgical Transactions, and therefore need not detain us. The other is that of a girl, six years of age, who menstruated regularly. The remainder of this section contains nothing worthy of note.

Section III.

Or, Curious Cases of Disease.

1. An ophthalmy, accompanied by ulcerations of the cornea, was cured by extracting some carious teeth of the same side. This hint is worth attending to, since it is pretty certain that many diseases are kept up, or even caused, by sympathy with other parts in a state of disease.

2. Dr. Forlenze found an ossification of the eye in a subject at Paris. The sclerotic was natural; but the iris, the crystalline lens, and the vitreous humour, were completely ossified. The same gentleman operated for the cataract in presence of M. Fournier, where the crystalline lens was perfectly ossified.

3. M. Imbert removed from the face of a Mons. Perrier de Gurat, a remarkable sarcomatous tumour affecting the nose, which was divided into five lobes, covering the greater part of the face, and rendering the visage so hideous, that the poor gentleman was obliged to seclude himself from society. It weighed two pounds. It was removed with safety.

4. A stone, the size of a pigeon's egg, was removed from under the tongue of a man 37 years of age. It had caused the most exquisite pain and profuse salivation.

5. Saxonia relates the case of a woman, who for a long time suffered the most excruciating pain on the *right* side of her head. On dissection, the *left* side of the brain was suppurated, while the right was perfectly sound.

6. A young lady died of long-continued and severe epileptic fits. On dissection, ten or twelve bony productions, half an inch in length and very sharp pointed, stood out from the cranium near the superior longitudinal sinus, penetrated the dura mater, and injured the brain.

7. M. Fournier relates the following case himself:—

"*An unmarried woman, 48 years of age, was suddenly seized with a pungent and lancinating pain in every part of the head, except the occipital region. This pain was excruciating, the patient appearing phrenitic, and uttering the most lamentable shrieks. The paroxysms of pain recurred every five or six minutes, and lasted about a minute each time. The patient was pale, and the pulse slow and weak during the intervals; but as the paroxysm came on, the countenance reddened, and the pulse became frequent and bounding. M. Fournier learnt from the patient, that seven or eight months before this she had received a blow on the head by the key of a door, which had caused sharp pain for some time, followed by vertigo, which went off without any medicine. M. Fournier attributing the present symptoms to the former injury, prescribed a grain of the tartrite of antimony, which vomited her once. The second day, two grains were*

prescribed, and she vomited several times; the third and fourth days, the same medicine and the same result. The fifth day, three grains; the sixth, four grains of the tartrite, when violent vomiting and straining succeeded, during which there burst, all at once, a quantity of inconceivably fetid pus from the mouth, nose, and ears. From this moment the head-ache vanished, as if by magic. Three days afterwards, an emetic brought away a small quantity by the ear; after which the patient soon recovered completely."

This is certainly a curious case, and a curious method of treatment. If M. Fournier suspected inflammation or suppuration within the cranium, a repetition of emetics seemed a singularly hazardous practice. We should be inclined to think that it was abscess in the mastoid cells, and that the matter had made its exit partly by the Eustachian tube or tubes, and partly by the external ear, having burst the membrana tympani.

8. A man received a wound by a musket bullet, which penetrated into the brain, through the frontal sinus. He recovered, in a short time, without any untoward accident, and enjoyed excellent health for four months. At the end of this period he was suddenly seized with a lethargy, and died convulsed. The ball was found in the medullary substance of the brain, half an inch above the anterior portion of the left lateral ventricle.

9. A bullet remained in the substance of the brain during a period of two years, and finally proved fatal. Another man lived fourteen years, during which time a piece of iron as large as a finger was lodged in the brain, and eventually was dislodged by the efforts of Nature.

10. Blegny relates the case of a lady who was long afflicted with severe pain in the head, accompanied by fever. At length, she lost her sight; and her sufferings were so great that she died. On examination, a stone, the size of a bean, was found at the origin of the optic nerve, in the substance of the thalamus.

11. Guersent relates an interesting case of rupture of the œsophagus, in a girl seven years of age, by vomiting. The symptoms were, fever, thirst, sighing, nausea, convulsions; the tongue thrust out of the mouth, the skin of a crimson colour. Extreme debility followed the convulsions; the face became of a violet colour, the pupils dilated, the skin burning hot, deglutition painful, respiration difficult; death, in thirty-six hours. An oval oblong rupture of the œsophagus, a little before that tube penetrates the diaphragm, was the cause of all. The right thoracic cavity was filled with a brown liquor. A stilette passed from the opening in the gullet into the stomach.

12. A man, sixty years of age, swallowed a piece of meat, which stuck in the œsophagus, near the lower end of the tube. Alarming symptoms followed. The surgeon could not displace the foreign body. He opened the median vein of the

right arm, and injected four grains of emetic tartar dissolved in an ounce of water. About a minute afterwards, the patient vomited up the piece of meat.

13. Dr. Latour, first physician to the Grand Duke of Berg, relates the following very interesting case. A soldier received a musket shot in the breast, and was carried off the field of battle almost dead. A tremendous hæmorrhage ensued, but it had nearly ceased by the third day. After this, the strength of the patient gradually recruited, and suppuration succeeded the hæmorrhage. Several pieces of the fractured rib now came away; at the end of three months the wound was cicatrized, and the man's health was re-established, with the exception of palpitation of the heart, which annoyed him for three years afterwards. Six years after the accident, he died of a disease unconnected with the wound. M. Mausion, chief surgeon of the hospital at Orleans, opened the body. The cicatrix was deep and extensive. Pushing his researches farther, he discovered the ball encased or lodging in the right ventricle of the heart, covered over, in a great measure, by the pericardium, and resting on the septum medium.

14. A remarkable ossification of the heart, by Senac, is related; but the same is published in Senac's book. "Garanjeot opened a *Jesuit*, 72 years of age, and found in the *walls of the ventricles* a bone four inches and a half long, and as thick as one's thumb."

15. The following extraordinary *treatment* is by M. Fournier himself. "A soldier received a shot from a musket fired close against his breast. The ball passed directly through both lobes of the lungs, entering at the left, and passing out from the right side. Several pieces of his clothes, and of the wadding of the musket, were carried in with the ball. M. Fournier passed a *seton* through the chest, and of course through the *lungs!* By the movement of the seton every day, the foreign bodies were drawn out along with the suppuration, and in twenty-seven days the wounds were cicatrized. Several of M. Fournier's comrades remonstrated against the seton, but our author was resolute, supported by the authority of Desault, who had passed a seton on a similar occasion with success.

16. The English *Knife-eater*, who made such a noise here a few years ago, and who died at Guy's Hospital under Dr. Curry, has a conspicuous niche in the French Dictionary.

17. A woman was afflicted with ascites from the age of thirty to fifty-one; during which period she was tapped one hundred and fifty-four times, ten quarts at a medium being drawn off at each operation. She never abstained from *work* during these twenty years of dropsy; and, what is not a little singular, she

brought forth and suckled two fine children in that time, and was three or four times tapped during each pregnancy!

18. A child, ten years of age, by a fall on a sharp body, was wounded in the great curvature of the stomach to the extent of two inches; five stitches were taken in the wound, and in eleven weeks the recovery was perfect.

19. M. Ansiaux saw a conscript who had a hernia of the stomach, which projected through a wound in the epigastric region. The stomach could be pressed in when empty, but re-returned again after eating.

20. Lemery relates the case of a clergyman, who had been afflicted with periodical vomitings for eight years, accompanied with some extraordinary circumstances. For five hours before the vomiting came on, the most acute pain was felt in the kidneys. The vomitings lasted, in general, four or five hours, and consisted of a brownish watery fluid, having a *strong odour of urine.* The man ate little, but drank freely of wine. After these periodical attacks, he enjoyed good health.

21. M. Fournier was called to a man at Brussels, some time ago, who for four years had been afflicted with a most obstinate constipation of the bowels, that resisted every means of cure. On dissection, the whole of the intestinal canal was so indurated and obliterated that a probang could scarcely be pushed through any part of it. The rectum was become nearly cartilaginous. This wretched state of the bowels was brought on by a long continued use of acetate of lead in injections, which remedy was advised by a medical man for a diarrhœa that resisted the usual means of cure.

22. In the year 1808, Professor Thomassini of Parma, saw a man, thirty years of age, of whom he relates the following curious circumstances. This man was habitually costive from his youth, but each year the torpor of his bowels increased. From the twentieth to the twenty-fourth year of his age, he had only one evacuation every eight or ten days; afterwards, at intervals of twelve days. At thirty, the date of his examination, an interval of twenty-two days took place between each fæcal evacuation. His appetite is now good, and he eats as much as two men. He becomes progressively emaciated however: his thirst is great, his urine natural in quantity and quality. No remedy nor regimen can alter the state of his bowels. Purgatives operate, but produce such debility that they cannot be persisted in. His excrements are hard, dry, in the shape of small balls. Pulse frequent, heat natural.

23. M. Rivolat has communicated to the society of Marseilles a case of constipation which lasted six months, during which time, there was no alvine evacuation. The patient was

restored to health afterwards, and the intestinal functions reinstated.

24. M. Demet relates the case of a man, 50 years of age, who in his youth had been subject to nasal hæmorrhage, which ceased at twenty-five. From that period, he experienced incessant pains in the right side of the abdomen. At forty-three, a pain in the lumbar region was added to the former. No medicine gave any relief. He was next attacked with hæmaturia to a very alarming degree. One day, after passing much blood by urine, the patient voided per urethram a round worm fourteen inches in length, and the size of a goose quill, after which he found himself greatly relieved. The hæmaturia ceased. In the course of three months this man passed by the same channel, fifty worms of this description, but of different sizes. The patient had notice of their appearance by a sense of heat in the urinary passages, and a slight febrile movement, which went off as soon as the worms (which were dead) had been ejected.

25. Albosius relates an instance of a fœtus retained twenty-eight years in the womb. It was petrified.

26. A woman of Soigny, thirty years of age, four years married, and who had one miscarriage, became pregnant, quickened, and had a flow of fluids to the breast. At nine months, regular symptoms of labour came on; but shortly ceased. In the course of a month, she fell into a state of great debility, which continued for eighteen months, during which she was often despaired of. After this, she recovered strength, but the milk continued in her breast for thirty years! She had no catamenia during this period. She died at the age of 61, of peripneumonia. A tumour, eight pounds in weight, was found attached to the fundus uteri, inclosing a male child perfectly formed, and of the natural size that might be expected at nine months pregnancy. It had four incisor teeth, two above, and two below. It did not exhibit any sign of putrefaction, nor exhale any disagreeable smell. The skin was thick, stiff, and of a yellow colour. The bones were of a larger size than those of a full grown infant. It was enveloped in a chorion and amnios, which membranes were ossified as well as the placenta. The dissection was performed in the presence of two physicians and a surgeon.

27. A fœtus was found in the abdomen of a woman, who had been pregnant twenty-three years. It had neither umbilical chord, placenta, nor membranes. It was almost entirely petrified.

28. At the end of twenty-five months of utero gestation, a woman, 45 years of age, and who had previously been the mother of eleven children, was affected with a tumour at the navel,

which she opened herself and dischaged a putrid infant. She recovered. M. Fournier thinks, that in these instances (three are related somewhat similar to the last) the fœtus escaped through the parietes of the womb into the cavity of the abdomen, in consequence of abscess in the womb; and that the subsequent external abscess was the result of the irritation of a foreign body in the abdomen.

29. The unfortunate Gilbert, a young poet, who by his eloquent satire of the "18th Century," promised to prove a second Boileau, having become insane, swallowed a key five inches and a half in length. He spoke clearly, respired easily, and complained of no pain in his throat; only had some difficulty of swallowing. From the state of his mental faculties, he was not believed when he asserted that he had swallowed the key. He frequently, however, repeated, though with an ironical smile, that the key was in his *throat*. He was taken to the Hotel-Dieu, where he was examined, but nothing extraordinary could be detected by the surgeons. Nevertheless he died. On examining the body, the key was found in the œsophagus, the ring end downwards, and the other end hooked on the aretenoid cartilages.

30. Vicq-D'Azyr relates the case of a woman, who had been subject to epileptic fits for twelve years; and which were now so frequent as four or five times a day. They always commenced with peculiar sensation in one leg, near the lower part of the gastrocnemius muscle. A medical gentleman who was present at one of these accessions plunged a scalpel into the part affected, and came in contact with a hard body, which he dissected out, and found to be a dense cartilaginous ganglion, the size of a very large pea, that pressed upon the nerve, which he divided. The woman had no return of epilepsy.

31. Vesper relates the case of an old man afflicted with hemiplegia, who presented the singular phenomenon of one half the body (the paralytic) completely jaundiced, while the other retained its natural colour. In the face it was very remarkable, as exactly half the nose was yellow and the other natural.

32. Morgagni saw a case of metastasis of urine to the brain. On opening the head of a man who died of suppression of urine, the brain was found inundated with this peculiar excretion.

33. Gastellier saw the matter of a large abscess near the malleolus externus absorbed suddenly, and translated to the stomach, from whence it was thrown off by vomiting.

34. Simorre (M. Percy relates the case) was born at Mirepoix in 1752. At the age of 15 he entered the army, and served twenty-one years in the regiment de Berry, where he arrived at the rank of captain. He had made the three campaigns of Corsica, and it was there that the young Simorre contracted

the germ of his future fatal malady. He had bivouacked a long time on the marshy banks of a river, where the atmosphere was constantly obscured by vapours; when he, all at once, was seized with lancinating pains in the great toes and ankles. These had no sooner ceased, than he was afflicted with a severe ophthalmia, which, however, gave way in a short time. For several years the same succession of symptoms took place every spring, and without giving way to any medicine, terminated the same way. In course of time there was no interval of health; as soon as the ophthalmy ceased the pains commenced, and vice versa. The pains spread from the feet to the knees, and even to the hips; while his eyesight became daily weaker. In 1785, Simorre could not walk without an assistant, who also served as a guide. The year following, every joint was affected synchronously, and anchylosis made alarming progress through all the articulations. He was obliged to leave the service and retire to Metz. For a long time he bore up courageously against the ravages of disease; he felt his limbs becoming immoveable; yet, deprived of the use of several members, he braved the most exquisite sufferings in attempts at motion! The arms and *head* shared the same fate as the feet and knees. The whole body was rendered motionless. The lower jaw (we think for *head* we should read *neck*, above) submitted to the universal immobility! Then Simorre, according to his own expression, was only a living corpse! Happy, says M. Percy, had been poor Simorre, if *insensibility* had been granted this living corpse! But far from enjoying this sad repose, Simorre, who had already suffered so much, continued still the victim of the most exquisite tortures! He lay four months on a sofa, without being able to bear the removal to a bed. The attitude which he there preserved, has evidently determined that of the skeleton, as it now appears, because the various articulations then acquired a *solidity* that rendered them ever afterwards useless. This new change occasioned the unhappy Simorre the most horrible torments. The least motion, the most gentle touch, caused him to cry out with dreadful anguish. He never slept for one moment while on this sofa of sorrow! At length he was moved into a bed; but there he spent two years of misery without ever sleeping! The moment that he attempted to close his eyes, every member was agitated with the most painful convulsions, on which opium had no effect. In 1792 his joints, which had become enormously enlarged, were quite unwieldy; and the articulating extremities of the bones were so increased in volume as to approach each other, and leave no shaft! From this time, the excessive torments, which Simorre had borne with a firmness worthy of an ancient Stoic, became much assuaged, and he could bear to be moved without experiencing much pain.

He was lifted off the bed once a month, like a rigid corpse, but care was taken not to touch the *mould*, as it were, in which he lay, otherwise he suffered tortures in forming a new one. Though freed from those excruciating torments which he had formerly experienced, Simorre was still a sufferer. He never could sleep more than a quarter of an hour at a time; yet he blessed his stars that he was no worse, and amused himself with cheerful discourses and lively songs! During a great many years, he published an annual almanack of songs, composed by himself, and by the sale of which he supported himself in his state of misery! His ballads breathe the spirit of gaiety; and in them he often depicts himself in such a manner, as at the same moment to inspire mirth and commiseration!

Simorre had a good figure and a cheerful expressive countenance. His black and curled hair covered a large forehead, terminated by fine arched eyebrows. His nose was aquiline, his eyes sparkling. "This philosophical *head* (says M. Percy,) contained the whole soul, the whole existence of Simorre!" This unfortunate officer terminated his career of earthly sufferings in 1802, aged 50 years.

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(From the London Medical Repository for November, 1823.)

An Account of two Cases of Biliary Calculi of extraordinary Dimensions. By T. Brayne, Esq. of Banbury.

Case 1st.—A female, fifty-five years of age, of a thin habit and melancholic temperament, had been afflicted, during the last twelve months, with uncommon languor and prostration of strength. She had experienced paroxysms of pain in the epigastrium, which generally commenced towards night, and continued for several hours. These attacks returned every two or three weeks, for five or six successive times, and were, for the most part, but not always, succeeded by slight jaundice, which soon disappeared. About a month after the last attack of pain, she became the subject of continued fever, characterized by constipated bowels, scanty secretion of high-coloured urine, and great mental irritability, almost amounting to alienation. She suffered no local pain. After continuing for a long time in this state, she was suddenly seized with severe pain in the left iliac region, accompanied with tenderness on pressure.

"This urgent symptom continued unmitigated for sixteen or eighteen hours, after which she became suddenly better, and soon passed a natural alvine evacuation, which contained a calculus of extraordinary size. This was followed in a short time by an abatement of the febrile symptoms; but she remained in a state of low muttering melancholy for some months, from which she did at length recover, under the gentle and long-continued influence of mercury on the system."

The long diameter of this calculus was $1\frac{3}{8}$ inches, its short diameter $1\frac{1}{4}$ of an inch, and its circumference at the widest part $3\frac{3}{4}$ inches. It did not possess a concentric laminated arrangement, but was radiated from the circumference towards the centre; having here and there interposed between the radii, particularly towards the middle of the calculus, minute portions of a brown friable matter. The surface was rough and tuberculated. The chemical analysis of this calculus, as detailed by Mr. Brayne, sufficiently proves its biliary origin. The subsequent history of the patient, however, puts its nature beyond doubt.

About a year after the patient had passed this very large calculus she died of hydrothorax. Mr. Brayne found, on dissection, the liver of its usual size and colour, but more solid and close in its texture. "The cystic and hepatic ducts were of the usual dimensions, but the gall-bladder itself was smaller and very much thickened, containing only a little pale unhealthy bile. It had contracted a strong adhesion, about the size of a shilling, to the duodenum, close to the pylorus. There was no uncommon appearance of vascularity. On removing these parts from the body, a communicating aperture, large enough to admit a crow-quill, was discovered in the centre of the adhesion. One kidney was studded with numerous flat tubercles in its cortical part." There was no other morbid appearance of consequence, except an accumulation of serum in the right cavity of the pleura, amounting to about ℥xxiv.—This dissection illustrates, in a very satisfactory manner, the formation and the passage of the calculus into the intestines.

Case 2d.—Mr. Brayne was called, in the evening of the 24th February, 1822, to a married woman, aged sixty-five, labouring under an obstruction of the bowels. He found her lying on her back with her knees raised, the abdomen prodigiously inflated, with frequent gripings, incessant vomiting, the extremities cold and damp, and the pulse scarcely perceptible at the wrist. Although her articulation was indistinct, she was nevertheless sensible, and her countenance did not evince the Hippocratic expression of a dying person. She had rejected every thing from her stomach since the 19th, when the sickness had suddenly invaded her without any apparent cause. Va-

rious measures had been resorted to by the medical attendant without success.

Mr. Brayne ordered her to have three drops of croton oil in two pills, of which she was to take one directly, and repeat it in four hours if necessary; he also directed warm applications to the extremities, "hot fomentations to the abdomen, and, in an hour or two, a little wine." The second croton pill was taken. On the following morning the bowels had not been relieved, but the stomach was more quiet than it had been. Some castor oil was next given, and, at intervals, a colocynth pill with minute doses of opium. In the evening some thin offensive dark-coloured stools had been procured. Various purgatives and injections were persisted in; and after two or three days, evacuations more natural in colour and smell were freely passed. From this time she rapidly improved. A few days afterwards (March 11) she passed a biliary calculus, in figure and size resembling half a large pigeon's egg.

On the 17th March the same train of symptoms recurred in a slighter degree, and in a few hours she passed another calculus, of larger dimensions, and of a flat square shape. On applying the flattened extremity of the former and smaller calculus to the greater side of the other, (which side was concave, as if compressed when soft by some convex body,) a correspondence was observed which gave the idea of intimate juxta-position.

For some months previous to the severe symptoms, for which Mr. Brayne's attendance was first requested, this patient had been frequently affected with a dull pain in the epigastrium, with a sense of weight and oppression in that situation. These attacks commonly occurred towards bed-time, and varied in their continuance from half an hour to two or three hours. They were not accompanied with sickness, nor followed by jaundice. After the passage of these calculi the pain and load at the epigastrium entirely subsided. June the 4th, she complained of symptoms distinctly marking the supervention of hydrothorax, as in the former case: she is still, however, under the author's observation. Mr. Brayne was averse from destroying the integrity of the calculi in this case for the purposes of analysis. The plate which accompanies these very interesting cases is beautifully executed.

On the Influence of Local Irritation in the Production of Diseases resembling Cancer and other Morbid Alterations of Structure. By Henry Earle, Esq. F. R. S. &c. &c.

This is a paper of considerable merit. Its author wishes to call attention to those cases which, from their progress and character, bear a close resemblance to those malignant affections,

which experience shows to be too deeply rooted in the constitution to be eradicated by any local operation. Mr. Earle considers those cases to originate from some *local* irritation, and to be subsequently maintained by *local* circumstances. In some of them the constitution may be previously disposed to disease, but in many it is only affected by the continual pain and excitement produced by the local affection. "From the experience," Mr. E. observes, "I have already had, I feel convinced that, by early directing our views to counteract the influence of local irritation, we may often succeed in restoring healthy action; whilst in more advanced stages of disease, we may be induced to resort to operations with far greater confidence of success than the appearance and progress of the complaint would warrant, independently of any such exciting causes."

On Diseases of the Lips.—The author considers that any ulcerations about the mouth will often be extremely difficult to cure, and, if neglected, will often assume, from the continual irritation to which the parts are subjected in the diurnal performance of their functions, the induration and other characteristics of carcinoma. "The irritation arising from the introduction of food, the effort of speaking, and the constant flow of saliva, are sufficient to keep up the morbid disposition." After a time the neighbouring glands will often become enlarged, and the surgeon be thus misled respecting the nature of the affection. In every instance that Mr. Earle has witnessed, "the disease has occurred either at the angle of the mouth or the lower lip, which, from its situation and greater mobility, is much more liable to be irritated in every action in which the mouth is concerned; it is much more readily drawn within the teeth, and when ulceration has taken place, it is exposed to the constant flow of the saliva, which, particularly in cold weather, causes excoriation and thickening in the surrounding integument."

Mr. Earle subjoins a very interesting case in illustration of this affection of the mouth which was cured by excision. To this case we cannot more particularly advert. Mr. E. alludes to other instances of this disease; and he is led to infer, from the result in all but one case, that it is not carcinomatous, or dependent on any constitutional disease, but arising from the continual local irritation above alluded to. From his own experience, and from witnessing the success of others, he considers that few cases afford greater promise of success than those corroding ulcers, with scirrhous edges, which occur about the lip. "The operation," he states, "is so simple, and the wound so constantly unites by the first intention, that in cases that do

not readily yield to local and constitutional treatment, it is far better to resort to it, and often the deformity will be less than when the ulceration heals without any operation."

Mr. Earle next enumerates similar occurrences of disease "*in the integuments of the nose and face*," arising from, and aggravated by catarrhal affection, the habitual use of snuff, the irritation of shaving, &c. When the disease remains stationary, or is inclined to spread, he recommends the morbid portion to be removed, either with the scalpel, the potassa fusa, or the arsenical paste, as may appear best adapted to the individual case.

On Diseases of the Tongue.—Mr. Earle very justly observes, that when any morbid action is set up in this part, many things contribute to maintain it. The extreme mobility of that organ, the almost continual use of it in eating, drinking, and speaking, the contact of the teeth which are often irregular or decayed, are quite sufficient to interrupt any efforts to restore a healthy action. The continued operation of these causes soon induces a disease which puts on all the alarming characters of carcinoma. The period of life, however, at which many of these cases occur, and the frequent success which follow operations on them, are alone sufficient to create doubts of their being carcinomatous. Respecting the management of these affections Mr. Earle gives the following directions:—

"Under the head of local treatment I would place in the first rank, the removal, as much as possible, of all local stimuli, such as the taking away any decayed or projecting tooth, the shielding the tongue from pressure by covering the teeth with wax or soft lint, the *complete privation of the faculty of speech*, the frequent cleansing of the mouth with a stream of water, any medicated liquor from an elastic gum bottle, instead of gargling or washing the mouth by any muscular effort, the employment of the most mild unirritating food, and, in bad cases, the prohibition from the use of solid food, substituting in its room milk and strong broths, &c." . . . . "When there is any enlargement of the glands, it will be right to combine with this the repeated application of leeches under the chin. As local applications to the ulcerated surface, few are more efficacious than a solution of nitrate of silver, or very diluted nitric acid, in the proportion of three or four drops to the ounce. Occasionally a solution of arsenic is very useful. Any of these may be thrown upon the ulcer with a syringe, which will be found better practice than keeping lint moistened with any lotion constantly applied to the part.

"In two instances of apparently very malignant diseases of the tongue, I have succeeded in obtaining perfect cures by the plan laid down. A similar practice was pursued in the case of a boy at the Foundling, in whom the disease was of a very peculiar kind. Clusters of very minute semi-transparent vesicles pervaded the whole thickness

of the tongue, occupying nearly one-half, and projecting considerably both above and below that organ. The slightest injury caused them to bleed most profusely, and in some places the clusters were separated by deep clefts, which discharged a fetid irritating sanies. This disease, which had resisted various plans of treatment, both local and constitutional, gradually yielded to a strict attention to perfect quiet and cleanliness, combined with large doses of hyosciamus, which was increased to the extent of ʒj. of the extract daily. I have employed the same remedy in many cases of ragged irritable ulcers in the tongue, and have been surprised at the influence which it seemed to exert over these affections. In some cases no other remedy has been employed, and its effect has been most marked and unequivocal. I have employed other medicines of the same class, but without any similarly beneficial result. Mercury, in all these cases, if administered in any quantity, seldom fails to aggravate the disease." Pp. 284—286.

On Diseases of the Prepuce.—Mr. Earle observes, that "there is, perhaps, no instance which affords a better illustration of the deleterious influence of the constant application of local stimulants, than the peculiar affection which occurs in the prepuce of old people." He gives the following history and progress of this affection, "which has been generally considered as cancer of the penis:"—

"It invariably occurs, as far as my observation goes, in persons with elongated foreskins. A want of proper attention to cleanliness in removing the secretion from behind the corona glandis, will often lay the foundation of this complaint. The prepuce, from the confinement of this irritating matter, is excoriated, and what at an early period of life would be called gonorrhœa præputii is the consequence, the part becomes œdematous, the frænum thickened, and it is soon impracticable to withdraw the foreskin. Phymosis being thus established, the frequent passage of the urine over the inflamed skin causes it to ulcerate, and the continual application of so stimulating a fluid produces much surrounding swelling and induration. Not unfrequently the natural opening in the prepuce becomes nearly obliterated, and the urine dribbles away through several ulcerated apertures. An intractable disease is thus established, from which, when it has attained this height, the knife is the only remedy."—Pp. 287, 288.

Treatment.—"If taken at an early period, the disease is perfectly remediable by removing the exciting causes. The greatest attention to cleanliness is the first requisite, and for this purpose an elastic gum syringe, with a blunted pipe, should be frequently employed to wash away the secretion from behind the corona glandis, and to convey any medicated lotions to correct the morbid action which has been excited. Where phymosis is quite established, an elastic gum catheter should be introduced; and if no disease in the urethra or prostate gland prohibit the practice, it should be retained in the bladder. The irritation from the constant flow of the urine will be

thus effectually prevented; and, generally speaking, the swelling and hardness will subside sufficiently to enable the patient to withdraw the skin to admit of the exit of the urine without passing over the prepuce. The introduction of a small portion of sponge will often assist much in dilating the contracted orifice; but when these means do not succeed, it will be right, in some cases, to divide the prepuce and expose the glans penis. I have known this operation succeed perfectly in a case which had been condemned to amputation." . . . . "For the reasons, then, above stated, amputation of the body of the penis should not, on light grounds, be undertaken; and only in cases where the induration has extended itself to the corpora cavernosa or glans penis, or where the state of the patient's constitution renders it advisable. With the views I have been led to entertain of the nature and origin of these affections, I should, with great confidence, rely on the removal of the diseased integument in those cases which did not subside by the plan of treatment already laid down. Even when the inguinal glands were enlarged, I should not be disposed to abandon the case as hopeless, as they will often subside on removing the exciting cause."—Pp. 289—292.

Mr. Earle next notices the effect of local irritation in the production of "new growths." We must refer our readers to the original paper for his observations on this subject.

On Chimney Sweepers' Cancer. By H. Earle Esq. F. R. S. &c.—This disease, which is invariably produced by the irritation of soot applied to the rugæ of the skin, is well described by Mr. Earle in this paper. From its rare occurrence, and its appearance at an advanced period of life, he considers that a constitutional predisposition is necessary to its existence. This opinion is confirmed by the liability of the same family to become affected with it. With respect to its treatment Mr. E. observes:—

"As far as my observation goes, no topical applications or internal remedies have the slightest influence over the disease. The scalpel is the only resource, and that may be resorted to with the most confident expectations of success, provided the whole of the diseased mass can be removed. Even where the inguinal glands are enlarged, this ought to be attempted; as I have before stated, that the disease commonly spreads to parts immediately contiguous, and the enlarged glands will often subside. When the testicle is affected, provided the spermatic chord has not participated, it will be right to give the patient the chance of recovery, rather than abandon him to a miserable and painful death."—Pp. 301.

Mr. Earle concludes his remarks with exhorting the surgeon to lose no time in the useless exhibition of remedies, but to proceed at once to the extirpation of the diseased parts. Two cases are subjoined to this article.

On the Destruction of the Fœtal Brain. By Mr. Hammond. —Mr. Hammond details a case in which embryotomy was per-

formed, yet the child lived forty-six hours afterwards. He observes, that "this case may be useful in a practical point of view, as it tends to show that the removal of a part, and the destruction of the whole cerebrum, does not insure death to the fœtus; and in such cases, where the head must be opened, it would be better to divide the medulla oblongata or the spinal chord; for the mother, who is generally prepared for the operation by the assurance that her child is already dead, suffers considerable pain on finding it born with life, but without brains."

A Case of Bronchocele. By Henry S. Roots, M. D. &c. &c. —This case shows the good effects of iodine in a case of bronchocele occurring in a lady nineteen years of age. Dr. Roots prescribed this substance according to the following formula:— "Potassæ hydriodat. gr, xxxiv.; ceræ albæ, ʒij.; adipis suillæ, ℥iss. M. The size of a garden bean to be rubbed into the tumour night and morning for ten minutes at each time." The proportion of iodine in the ointment was afterwards increased until it reached fifty-six grains; and during the latter part of the treatment, the internal use of the remedy was also adopted, twenty drops of the tincture of iodine having been prescribed three times a day. Two doses of the tincture every day were only taken, in consequence of its having produced sickness and pain in the stomach and intestines. The tumour entirely disappeared.

Dr. Roots had, at the period of his writing this case, a patient under his care suffering from a very considerable bronchocele, which has very materially diminished under the use of iodine.

Obituary Notice.

DR. BAILLIE.

(From the London Medical and Physical Journal for November, 1823.)

In our last number, we promised a biographical sketch of this distinguished physician: we could not hope to redeem this pledge so perfectly by any composition of our own, as by the following account of Dr. Baillie, given by Mr. Bell, in his Introductory Lecture; which he has had the politeness to send us for insertion. Mr. Bell had been previously speaking of the Hunters, and, having mentioned Dr. Baillie, he continued:—

"Gentlemen,—I have been led unavoidably to mention that name. But I shall not venture to give myself up to the feel-

ings which, at this moment, it could not fail to excite. Indeed, the reflections which arise on the contemplation of a loss so recent and so great, would carry me beyond the terms of praise with which you are as yet prepared to sympathise.

"You, who are just entering on your professional studies, cannot be aware of the importance of one man to the character of a profession, the members of which extend over the civilized world. You cannot yet estimate the thousand chances there are against a man rising to the degree of eminence which Dr. Baillie attained; nor know how slender the hope of seeing his place supplied in our day.

"The father of Dr. Baillie was the Rev. James Baillie, sometime minister of the kirk of Shotts, (one of the most barren and wild parts of the low country of Scotland,) and afterwards Professor of Divinity in the University of Glasgow. His mother was the sister of Dr. William Hunter and of Mr. John Hunter.

"In the earlier part of his education, he enjoyed great advantages; and, indeed, he was in the whole course of it peculiarly happy. From the College of Glasgow, he went to Baliol College, Oxford, where he took his degrees; and came finally under the superintendance of his uncle, Dr. William Hunter. By him he was brought forward into life; and, through his influence, was made physician to St. George's Hospital.

"The merest chance brought me acquainted with a circumstance very honourable to Dr. Baillie. While still a young man, and not affluent, his uncle William, dying, left him the small family estate of Longcalderwood. We all know of the unhappy misunderstanding that existed between Dr. Hunter and his brother John. Dr. Baillie felt that he owed this bequest to the partiality of his uncle, and made it over to John Hunter. The latter long refused; but, in the end, the family-estate remained the property of the brother, and not of the nephew, of Dr. Hunter.

"It was Dr. Hunter's wish to see his nephew succeed him, and take his place in these rooms as a lecturer. To effect this, he united with him his assistant, Mr. Cruickshanks; and, at his death, assigned to him the use of his collection of anatomical preparations during thirty years.

"It was under this roof that Dr. Baillie formed himself, and here the profession learned to appreciate him.

"He had no desire to get rid of the national peculiarities of language; or, if he had, he did not perfectly succeed. Not only did the language of his native land linger on his tongue, but its recollections clung to his heart; and to the last, amidst the splendour of his professional life, and the seductions of a court, he took a hearty interest in the happiness and the eminence of his original country. And may the world forget him who

forgets this first demand on his gratitude, and best excitement to honourable exertions! But there was a native sense and strength of mind which distinguished him, and more than compensated for the want of the polish and purity of English pronunciation.

"He possessed the valuable talent of making an abstruse and difficult subject plain: his prelections were remarkable for that lucid order and clearness of expression which proceed from a perfect conception of the subject; and he never permitted any variety of display to turn him from his great object of conveying information in the simplest and most intelligible way, and so as to be most useful to the pupils.

"It is to be regretted that his association in the lectureship made his duties here unpleasant to him; and I have his own authority for saying that, but for this, he would have continued to lecture some years longer. That Dr. Baillie ceased to lecture at a time when his opinions became every day more valuable, is the less to be regretted when we consider how he continued afterwards to occupy himself.

"His first work, on Morbid Anatomy, was, like every thing he did, modest and unpretending; but it was not on that account the less valued. A perfect knowledge of his subject, acquired in the midst of the fullest opportunities, enabled him to compress into a small volume more accurate and more useful information than will be found in the works of Bonetus, Morgagni, and Lieutaud. This work consisted at first of a plain statement of facts,—the description of the appearances presented on dissection, or what could be preserved and exhibited; and he afterwards added the narration of symptoms corresponding with the morbid appearances. This was an attempt of greater difficulty, which will require the experience of successive lives to perfect.

"His next work was the Illustration of Morbid Anatomy, by a series of splendid engravings; creditable at once to his own taste and liberality, and to the state of the arts in this country. He thus laid a solid foundation for pathology, and did for his profession what no physician had done before his time. Much, no doubt, remains unperformed; but I am confident that nothing which he has done will be undone by those who shall follow him.

"Besides his great work, he gave a description of the Gravid Uterus, and contributions to the Transactions and medical collections of his time.

"Dr. Baillie presented his collection of morbid specimens to the College of Physicians, with a sum of money to be expended in keeping them in order; and it is rather remarkable that Dr. Hunter, and his brother and his nephew, should have left to their country such noble memorials as these. In the College

of Glasgow may be seen the princely collection of Dr. Hunter; the College of Surgeons have assumed new dignity, surrounded by the collection of Mr. Hunter,—more like the successive works of many men enjoying royal patronage or national support, than the work of a private surgeon; and, lastly, Dr. Baillie has given to the College of Physicians, at least, that foundation for a museum of morbid anatomy, which we hope to see completed by the activity of the members of that body.*

"We cannot estimate too highly the influence of Dr. Baillie's character on the profession to which he belonged. I ought not, perhaps, to mention his mild virtues and domestic charities; yet the recollection of these must give a deeper tone to our regret, and will be interwoven with his public character, embellishing what seemed to want no addition. These private virtues ensured for him a solid and unenvied reputation. All wished to imitate his life,—none to detract from his fame. Every young physician, who hoped for success, sought his counsel; and I have heard him forcibly represent the necessity of a blameless life, and that, unless medical reputation be joined with purity of private character, it neither could be great nor lasting.

"The same warmth of feeling and generosity which prompted him to many acts of private charity and benevolence, were not without a powerful influence upon his conduct on more arduous occasions, and may well be supposed to have guided and sustained him in circumstances which might have shaken other men, of less firm and independent minds. But I shall not dwell on this view of his public character. The matters to which I allude are ill fitted for discussion in this place: they belong rather to the history of the period in which he lived, and will there be most suitably recorded.

"When you add to what I have said of the celebrity of the uncles, William and John Hunter, the example of Dr. Baillie, and further consider the eminence of his sister, Joanna Baillie, excelled by none of her sex in any age, you must conclude, with

* At a meeting of the Royal College of Physicians, on the 30th September, the following tribute of respect to the memory of the late Dr. Baillie, was ordered to be inserted in the College Annals:

"That our posterity may know the extent of its obligations to the benefactor whose death we deplore, be it recorded, that Dr. Baillie gave the whole of his most valuable collection of anatomical preparations to the College, and six hundred pounds for the preservation of the same: and this, too, (after the example of the illustrious Harvey,) in his life time. His contemporaries need not an enumeration of his many virtues to account for their respectful attachment to him whilst he lived, or to justify the profound grief which they feel at his death. But to the rising generation of physicians it may be useful to hold up, for an example, his remarkable simplicity of heart, his strict and clear integrity, his generosity, and that religious principle by which his conduct seemed always to be governed, as well calculated to secure to them the respect and good will of their colleagues and the profession at large, and the high estimation and confidence of the public."

me, that the family has exhibited a singular extent and variety of talent.

"Dr. Baillie's age was not great, if measured by length of years: he had not completed his sixty-third year; but his life was long in usefulness. He lived long enough to complete the model of a professional life. In the studies of youth,—in the serious and manly occupations of the middle period of life,—in the upright, humane, and honourable conduct of a physician,—and, above all, in that dignified conduct which became a man mature in years and honours, he has left a finished example to his profession.

"After so many years spent in the cultivation of the most severe science,—for surely anatomy and pathology may be so considered,—and in the performance of professional duties on the largest scale,—for he was consulted not only by those who personally knew him, but by individuals of all nations,—he had, of late years, betaken himself to other studies, as a pastime and recreation. He attended more to the general progress of science. He took particular pleasure in mineralogy; and, even from the natural history of the articles of the Pharmacopœia, he appears to have derived a new source of gratification.

"By a certain difficulty which he contrived to place in the way of those who wished to consult him, and by seeing them only in company with other medical attendants, he procured for himself, in the latter part of his life, that leisure which his health required, and which suited the maturity of his reputation; while he intentionally left the field of practice open to new aspirants.

"When I last saw him, (the day before he left town for Tunbridge,) I enjoyed a long and interesting conversation with him. He was aware of his condition and his danger. His friends believed that he was suffering from a general decay of strength,—a sort of climacteric disease. To me he appeared like a man who had some local source of irritation, or visceral affection, which was preying on his constitution.

"Every body hoped that his state of health was to be ascribed to the fatigue of business, and that retirement would afford him relief; but in this we were disappointed. He sensibly and rapidly sunk, and, by the calmness and resignation of his last days, summed up the virtues of his life."

To the above account we subjoin some further particulars, with reference to the dates.

Matthew Baillie, M.D. was born in the Manse of Tholy, near Hamilton, in October, 1761. His father was the Rev. Dr. James Baillie, clergyman of the Presbyterian church; his mother was Dorothea, sister of Dr. and Mr. John Hunter.

He went to the University of Glasgow in his thirteenth year. In 1779, he was appointed to an exhibition at Baliol College, upon which he went to reside at Oxford. In 1780, he went to London, and took up his abode in Dr. Hunter's house (keeping his terms at Oxford). In 1785, began to give regular lectures on anatomy. He lectured on anatomy, in conjunction with Mr. Cruickshank, until 1799. During this period he made a collection of anatomical preparations, which he afterwards presented to the College of Physicians. In the year 1787, he was elected physician to St. George's Hospital: he held this office thirteen years; became doctor of physic in 1789, and immediately afterwards a fellow of the College of Physicians. The work on Morbid Anatomy was published, we believe, in 1795; this went through several editions. The engravings to illustrate the Morbid Anatomy were published in fasciculi, which appeared at intervals; they began to appear in 1799. He was elected fellow of the Royal Society in 1789; he was also a fellow of the Royal Society of Edinburgh, and honorary member of the College of Physicians in Edinburgh.

Dr. Baillie had two sisters, who survive him: one of them, Miss Joanna Baillie, the authoress of Plays on the Passions; and he has left two children, a son and a daughter. Mrs. Baillie was the daughter of Dr. Denman, and sister of the Common Serjeant and Lady Croft.

Medical and Philosophical Intelligence.

On a Humour of the Eye little known.—We have had more than one occasion to mention the researches of M. Jacobson, of Copenhagen, who thinks he has reason to conclude—that a serosity or watery humour naturally exists between the choroid coat and the retina, and contained in a duplicature of the latter; that a minute portion of the same humour also exists on the corresponding anterior part of the retina; that this humour sometimes accumulates in so great quantity as to push forward the retina and the vitreous humour, and to produce the disease, called by Scarpa, *Staphyloma posterior*, by distending the choroid and sclerotic; and that this humour can be displaced by a calculous deposit, which is usually, and erroneously, considered as an ossification or petrifaction of the membranes of the eye and of the vitreous humour.—*Nye Hygeie, Copenhagen.*

On the Constituents of Tendons.—The School of Erlangen appears to be rising into respectable notoriety. Professor Isenflamm, one of its ornaments, has instituted some experimental researches into the chemical constituents of tendons, and seems to have established, that

they differ little from muscles, with the exception of their being destitute of salts. By carefully macerating and dissecting tendons, he came to the conclusion—That they are formed of cellular membrane, arranged in fibres, accurately parallel with tendinous fibres crossing them, and forming a membrane of animal gluten, and of albumen, from which, and the fibrous texture, the satiny appearance of tendon is produced. He decides that nerves enter into their structure, whether they can be traced or not, from their sensibility when diseased; for, according to the Professor, no vital property, such as the nervous, can be generated, though it may be developed by a morbid state of the parts.—*Archives de Médecine.*

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On the Uvula.—In an excellent paper on the Anatomy, Physiology, and Pathology of the Uvula, M. Lisfranc regrets that he could find little precise and scientific information concerning it in systematic works. The dimensions of the uvula are various. He has seen two subjects in which it appeared like a very short tubercle, though otherwise voluminous. In another case he found it of its ordinary length, but as fine as a thread. These circumstances he thinks could have but little influence on the voice. Hagendorn, in the *Ephèmèrides des Curieux de la Nature*, gives the case of a girl born without a uvula, in whom the voice was unaffected and natural. In the same work Vallgnadius mentions a bifid uvula, in a subject who at the same time had hare-lip. Both Roux and Lisfranc himself have observed similar cases. It is wanting in all animals but man; careful dissection proves that the uvula, when very thin, and represented in a tubercle, is wholly composed of mucous membrane and a great number of follicles; and the bifid state, or the absence of the palato-staphylini muscles in its thickness, will cause its descent. The uvula is formed by these muscles, whose supporting fibres separate as they approach it, and their prolongation is covered by a mucous membrane enclosing a greater quantity of follicles than has been hitherto pointed out. Under this is a dense cellular tissue, studded with small glands, whose organization resembles that of the tonsils, and the thalamus of the crypta agglomerata, found under the mucous tissue of the velum pendulum palati in the horse and other animals. The free extremity of the appendix appears to be destitute of muscular fibres. Here M. Lisfranc has repeatedly found three mucous follicles much developed, very distinct, and susceptible of augmentation, to about a third of the usual length of the uvula. M. Boyer has observed upon this point a small transparent tumour produced by the accumulation of serosity. Frequently the appendix is soft, chiefly towards the top, and makes a similar structure to that of the nasal polypi of the mucous membrane. It is needless to say that it may become scirrhous, carcinomatous, and even cartilaginous, and that it is often in a state of procidentia.

We continue the interesting paper of M. Lisfranc, by giving his physiology of the uvula. The remark of Hagendorn opposes the conclusion that the uvula concurs in the formation of the voice; and many patients who have had it removed by operation, show that it has but little influence on the articulation of sounds. Many physi-

cians know that venereal ulcers have destroyed both the uvula and the pillars of the velum, as well as the epiglottis, in distinguished comedians, and that notwithstanding the character of the voice has lost nothing of its pliancy and freshness. If syphilis alters the voice, says M. Biett, by the destruction of the uvula, it is not so much the want of the uvula as the deep morbid taint which the disease has given to the rectum and the parts in its vicinity, and which is beyond the reach of cure. Our author believes with Richerand, that the uvula is destined to advertise the pharynx of the arrival of ailment; and that it furnishes from its numerous follicles, mucus to facilitate the passage of the food. M. Lisfranc, besides, thinks he has discovered and proved that the uvula serves to prevent the nasal mucus from falling into the glottis. Its movements in this point of view may be seen by opening the mouth before a mirror, and strongly drawing in the breath. The strongest proof of this, however, is, that when a complete case of procidentia occurs, or when it has been entirely removed, the nasal mucus very readily gets into the glottis during a slow and long drawn inspiration.—*Revue Medicale.*

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On the Brain.—The researches and experiments of M. Flourens and Fodéra, borrowed it seems in a great measure from Roland's work, "Saggio clinico sulla vera struttura del cervello, e sopra le fonzioni del sistema nervosa," have led to many interesting facts and observations on the functions of the particular parts of the brain. Among these we may mention a case related to the Académie Royale by MM. Foville and Pinel-Grandchamps, of a female whose upper and lower extremities of the left side had been for several years completely paralyzed. On examination they found an old extravasation on the right hemisphere of the brain, in the medullary space, outwardly, between the thalami optici and the corpora striata, and equally affecting these two parts. The authors stated this fact to confirm their former opinions on the seat of motion in the two limbs, namely, that the seat of motion in the upper extremity is placed in the corpus striatum. Hence it should seem to follow, they think, that when paralysis occurs at the same time in both the upper and the lower extremity, the corpus striatum and the thalamus opticus will both be found morbid.—*Quarterly Journ.*

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On the Discolouration of the Skin in Yellow Fever.—M. A. Desmoulins has laid before the Institute a paper on this subject, in which he has come to the following important conclusions:—

1st. That there is not in yellow fever any increased secretion of bile. 2d. That both the black coloured substance vomited and evacuated per anune, are exhalations from the coats of the intestines. 3d. That the yellow colour of the skin takes its rise from an elaboration of the blood, in the corpus mucosum of the skin, in which a sanguineous congestion is established by a determination, simultaneous with, and analogous to, that which produces the hemorrhage from the mucous membrane of the intestines. 4th. That the more dense structure of the cutis is the only reason why hemorrhage does not take place from it. 5th. That the yellow tinge of the skin is merely a

species of ecchymosis. 6th. In a word, that the yellow fever is nothing else than a determination of blood to the skin and mucous membranes, the effects of which are diversified on these surfaces by the different degrees of the intensity of the determination combined with the unequal permeability of the membranes.

These different propositions are supported by a number of ingenious, and, in many cases, conclusive arguments, of which our limits will only admit an outline. In several cases where the black vomit had occurred, the stomach, after death, was found filled with the same matter, while the pylorus was entirely obstructed by scirrhus, proving that water could not come from the liver; nay, Dr. Ffirth discovered this dark substance completely formed in the arteries of the stomach. Authenrieth, and several others, have observed the serum to be yellow in diseases free from any biliary complication; in the bodies of children who were born with the yellow gum, no indications of hepatic disease could be discovered, nor in a case of this kind, examined by M. Lassaigne, could the least trace of bile, or of any of its elements, be found either in the serum or the fibrine, or in the coloured particles of the blood. Some old men have become yellow, and yet enjoyed good health; and some nations have a permanent yellow tinge. This colour cannot, therefore, in all cases be the effect of bile, and in the yellow fever is most probably owing to the elaboration of the blood in the corpus mucosum Malphigi.

In conclusion, M. Desmoulins thinks he can perceive a conformity of the symptoms of yellow fever with those in the diseases produced in dogs, in the experiments of M. Gaspard, by the transmission into their veins of the fetid juice of fermented cabbages. This resemblance he traces still farther, viz. to the symptoms on dissection, and from thence is led to deduce a similarity of origin in both diseases, namely, the introduction of putrid substances into the mass of blood. This analogy of symptoms and origin, of course, extends not only to yellow fever, but to typhus, to intermittents from malaria, and to all diseases supposed to take their origin from putrid exhalations.—*Magendie's Journ. de Physiologie.*

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Case of Excreted Intestine.—In a report to the Académie Royale, upon a paper by MM. Bouniol and Rigal, junior, entitled Intus-susceptio intestinalis, followed by an excretion of about thirty inches of small intestine and a portion of mesentery,—MM. Larrey, Roux, and Beclard, state, that the patient had been subject to great indigestion, and at last was affected with all the symptoms indicating internal strangulation. There were complete suppression of the alvine evacuations, stercoral vomiting, sharp pains in the abdomen, and an elevated tumour very sensible to the touch in the right iliac region. In the course of twelve days, at the termination of a violent fit of colic, he voided by the anus a portion of intestine and of mesentery. From this moment his amendment was rapid, his health was restored, and there remained no other inconvenience than a slight feeling of pain in the right iliac region. About three months afterwards, the patient having eaten a very great quantity of cherries, was seized with symptoms of peritonitis, and died; but the body was not in-

spected. M. Larry thinks that a portion of the intestine must have been invaginated, strangulated, and seized with gangrene, separated in consequence from the living tissues, and thrown into the great intestines, whence it was ejected. In wounds of the intestines M. Larry has seen them reunited as neatly as if it had been done by the suture of a glover. Two pieces of intestine, indeed, unite most readily, as M. Larrey has demonstrated by experiments on dogs.

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On the Causes of Apoplexy.—In giving the history of four cases of apoplexy, in which emetics appeared to have been exhibited with advantage, contrary to the very general opinion of this practice being dangerous, Mr. Swan takes occasion to remark, that apoplexy depends more frequently on the difficult transmission of blood through the lungs, or from its not being properly organized, than is imagined. A stomach overloaded by wholesome food, or containing a small quantity of indigestible food, deranges all the parts to which the branches of the par vagum are distributed; and therefore the lungs do not perform their functions; in which cases, though bleeding is absolutely required, the quantity of blood may be taken away without affording complete relief; therefore, if a person is seized with apoplexy, and bleeding has not afforded relief, and there is no symptom of paralysis, and it is probable the stomach contains undigested food, it is advisable to give an emetic.—*Edinburgh Journal.*

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Ulceration of the Cæcum.—A gentleman of good family attended the king on his tour to Scotland last year, and there received a strain, apparently in the right groin, whilst jumping off a coach. Having also caught a severe cold at this time, he was laid up at Edinburgh with a large swelling in the right inguinal region, for which leeches, fomentations, aperients, &c., were used, and he got about again, so that he went shooting, and using much exercise during last winter, without any inconvenience. About the middle of May last, a swelling appeared in the same place again, and an eminent surgeon of this metropolis was consulted, and considered it to be an abscess forming, from which no danger was to be apprehended. It was opened on Sunday the 1st of June. On Monday he had a severe rigor; and on Tuesday much fever. On this day bark and other substances which he had lately swallowed, were observed on the poultice, which alarmed the patient excessively, but the surgeon did not consider it as of serious consequence, for some days, though the fæces came constantly through the wound. Till Sunday the 8th of June, M—— thought the patient was going on well; but on that day he perceived symptoms which led him to apprehend more mischief than a mere communication with the intestinal canal. A physician was called in; but the patient rapidly sunk, and expired on the 10th of June. The following were the minutes of the dissection left with the family:—

In the lower part of the abdomen, immediately above the right groin, there was a cluster of enlarged absorbent glands connected with the abscess. The ulceration, which had taken place in the formation of the abscess, had extended into the cæcum, or beginning of the great intestines, in consequence of which there was a large open-

ing, forming a communication between the cæcum and the external wound. The inner membrane of the intestine in the neighbourhood of the ulceration, to a considerable extent, was in a state of inflammation, being of a very dark colour, in consequence of the vessels being loaded with blood. There was no other appearance of disease in the abdomen. In the chest, the lungs were found unusually turgid with blood; and the surface of the right lung, towards the posterior part, was covered by a thin layer of coagulated lymph. In the cavity of the pleura, on the right side of the chest, there was about six ounces of serous fluid.—*Medico-Chirurg. Review.*

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On Salivary Fistula.—The difficulty of any salivary fistula is well known, and if it can be so ameliorated, as it appears to have been by M. Beclard's statement, we should have no hesitation in recommending its adoption. The method was to produce an internal fistula, to carry off the superabundant saliva. This was done in the case related by M. Beclard, by placing in the internal part of the thickness of the cheek a wire (*anse*) of lead, whose top fitted the excretory canal at the point where it was interrupted, and whose ends were tied in the mouth. The exterior wound, rendered bloody by incision, was united by the twisted suture. The cure was effected by M. Beclard in two cases without any deformity besides a linear cicatrix.—*Report of the Acad. Royale.*

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Case of Amputation of the Lower Jaw.—The patient in this case was aged 68, and of robust constitution. He had three years ago rubbed the skin over a pimple on the lower jaw, which ulcerated and spread so formidably with cauliflower edges, and lancinating pains, that the operation of excision was deemed the only remedy. M. Lallemand circumscribed the diseased part by two semi-elliptical incisions commencing on the upper lip, five or six lines from the commissure, and terminating towards the middle of the thyroid cartilage; they were very convex above and almost straight below. The periosteum was found engorged, thickened, and lardaceous, and the bone already affected. The cheek was dissected to the anterior edge of the masseter muscles on each side; and as the periosteum here appeared to be quite sound, he cut round the bone, and sawed it somewhat obliquely from without to within, and from before backwards, commencing with the left side. He afterwards detached the muscle and soft parts which were attached to the internal surface of the lower jaw and sawed the right in a semicircular manner. He successively tied the labial, the sub-maxillary, and ranine arteries, with some inferior branches, and before dressing the wound waited till all hæmorrhage had ceased, namely, about a quarter of an hour. He then brought the interior corners of the wound together by three needles and the twisted suture. The soft parts covering the jaw, were next brought close to the branches of the jaw, and maintained there by adhesive straps, and after having filled up the space which separated the divided portion with charpie, the whole was maintained in situ by compresses and some turns of a bandage. The patient, however, in a short time experienced so much difficulty in respira-

tion, that he tore off the bandage and a copious hæmorrhage ensued; for which the actual cautery and agaric were applied. After various difficulties which occurred were surmounted, the wound healed on the 50th day after the operation, leaving a space of about two inches between the ends of the jaw, through which the saliva flowed, the tongue dropped down, and the patient articulated very indistinctly. Our author, however, contrived for him a silver chin, enclosing a bit of sponge to take up the saliva, and which he could empty by the pressure of his tongue. It also improved his articulation.—*Archives Générales.*

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Operation for Staphyloraphia.—A fisher, aged 37, had a stick driven backwards into his mouth in foolishly descending into a ditch, supporting himself on the stick with his teeth. It entered the velum, and was only arrested at the pharynx. M. Ferrier an hour after found that the wound of the velum presented a flap in form of an angle of 70°, whose summit corresponded to the posterior spine of the nostrils; and the two sides were directed towards the free margin of the velum. The right side was nine lines in length, and the left twelve. The fragment fell down upon the base of the tongue. The back part of the mouth was observed through the wound. The tone of the voice was altered. Upon trying to swallow some coffee, part of it escaped through the nostrils. The indication of the treatment was plain, but the choice of means difficult. The interrupted suture was insufficient. M. Ferrier executed the operation thus: he placed the patient opposite to a window, his head supported and fixed on the breast of an assistant behind. His mouth was kept open by a piece of cork, fixed between the teeth of the right side. M. Ferrier then took a pair of polypus forceps, in his right hand, between whose blades was fixed a flat semicircular needle, six lines in diameter and armed with a ligature, whose ends were a third of a metre in length. The direction of the needle, stood at an angle of 90° with the blades of the forceps. The index and middle finger of the left hand in a state of supination, were placed upon the base of the tongue, immediately under and supporting the torn fragment. He then, with the needle, pierced the fragment from behind to before, three lines from its point, in such a manner as to make the needle pass between the two supporting fingers. When he had thus passed the needle he disengaged the forceps, carried them below the supporting fingers, and seized with them the point of the needle, and carried it out of the mouth, leaving the two ends of the ligature traversing the torn fragment, when it was no longer supported by his fingers. He then separated the needle from the ligature, and fixed on it the pipe of a small quill six lines in length, and forming with it a true T. He did no more than pass by the nostrils the ends of a thread opposite to that to which the quill was attached, an operation easily performed by means of Bellocq's sound, passed into the left nostril. The spring of the instrument being pushed, entered the mouth by passing through the back part of the nostrils and the wound; and to this spring the ends of the thread were fixed. On retracting the sound, it brought with it the threads, raised up the torn fragment, and maintained it

in its place. He then separated the threads at the anterior nostril, and fixed them by means of a knot and a loop upon a roll of linen placed before the opening. The patient was forbidden to speak, and had only pea-soup for four days. Every day the threads were examined to see whether they remained sufficiently tight. On the fifth day, the torn fragment, having formed a sufficient adhesion, the quill was removed with the rest of the apparatus. On the eighth day, the patient was well, and returned to his usual food.—*Revue Medicale.*

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M. Richard's Three Cases of Apoplexy.—1. M. X———, an officer, aged nearly fifty, strong constitution, considerable obesity, sanguineous, addicted to the immoderate use of spirituous drinks, was attacked, after a day passed in drunkenness, with a partial paralysis of the muscles of the left side of the face, which a bleeding with leeches and a blister, sufficed to dissipate. During many months after this attack he appeared to enjoy an excellent state of health; his spirits were active, his colour fresh and rosy, and his appetite keen. He continued to drink, however, at the rate of one hundred and eighty bottles of ale by the month, besides what he used at his repasts, and independently of a copious use of brandy. In process of time he began to have headaches, when not under the immediate excitation of the alcohol: and on the day of St. Louis, being at mass, he experienced a feeling of feebleness, accompanied by a copious sweat, which obliged him to retire from the church to a neighbouring coffee-house, where with two of his colleagues he drank a glass of wine, but scarcely had the liquor reached the stomach when he was seized with a violent pain at the epigastrium, general uneasiness, and abundant sweat. Another glass of wine was tried, which increased the pain to such a degree that the patient put his hands to the epigastrium and tore the skin with his nails. Very soon he was struck with violent pain in the head; he asked in a broken voice for vinegar to apply to his temples, but before it could be got, he fell down dead.

Being carried to the military hospital the inspection was made on the following day. The vessels of the hairy scalp, face, and neck were injected with blood; the cerebral veins were gorged, the arachnoid was thickened; the cerebral substance generally soft; the choroid plexus thickened and hardened; the optic bed of the right side presented some irregularities and was of an unnaturally greyish tint. In the centre of the cerebellum, in the midst of white substance, was found a kind of greyish tubercle, of which the edges were serrated, thick, and distinctly separated from the white substance; its size equalled a large nut; it contained no cavity, but its centre was softened. The lungs were sound. The stomach was large, and its greater cul-de-sac externally was of a deep red; and the corresponding mucous lining also of a uniform red, verging towards a brown. Towards the curvatures numerous blood vessels were observed, some of which approached almost to a blackish colour. This tint of the stomach was more distinct as the rest of the organ was remarkably white. The duodenum was brown on its internal surface, and its

substance softened, or even pulpy. The liver was loaded with fat, and the spleen enlarged.

2. Grare Athéné, soldier of the line, robust, was admitted into the hospital, labouring under the ordinary symptoms of uncomplicated icterus. The treatment was directed, says the narrator of this case, against the icterus, and not against the *gastro duodenal-inflammation.* He drank whey with nitre in it; he had emetics and soap pills. During the night of the 18th of his entrance, he began to utter the most piercing cries till daybreak, when he became insensible. The physician, believing that these symptoms depended on worms, ordered *lavement*, and the next day blisters to the legs; a few hours after which the patient died. The vessels on the surface of the brain were gorged with blood; upon the superior part of each hemisphere was a space of four lines in diameter, and of an inch in depth, somewhat softened, and of a yellowish tint. In the cerebellum was a morbid alteration, altogether similar to that in the preceding case. The vessels of the lungs were much engorged; the left ventricle was a little thickened; the larger intestines were filled *with indurated fæcal matter;* the stomach enlarged presented at its greater cul-de-sac the traces of a strong inflammation; the mucous lining, in a space equal to the palm of the hand, was of a bright red, mixed with brownish spots; the bladder was distended by urine, and the blood vessels of its surface injected.

3. M. Sch——, iron-merchant, aged forty-six, robust, affected for months with indigestion and headache, experienced great inquietude in consequence of seeing himself at the point of being obliged to pay the debts of a friend for whom he had become surety; but unexpectedly the money was sent to him and he passed rapidly to a state of extreme joy. He dined copiously, and made an abundant supper with a friend in the evening, and the next morning, at ten o'clock he was found dead in his bed. The inspection was made on the following day. The body exhaled a horrible odour; the abdomen was enormously distended with gas; a bloody froth issued from the mouth; the face was black by excess of injection of the capillaries; the walls of the chest were livid. The intestines exteriorly presented a great number of brown patches, of which some corresponded to a deep injection of the mucous lining. The stomach exteriorly was brown; the whole of its mucous coat was deeply inflamed, in some spots the colour approaching to black. The heart was enormous, the left ventricle being at least four times its natural size; on the contrary, the right ventricle was small, and its parietes thinned. The aorta was enormously distended, so that the injected aorta of another subject could be easily introduced into it. The lungs, engorged with blood and serum towards their base. The vessels of the dura mater injected; the arachnoid pale, but thickened, and a whitish albuminous liquid was effused between it and the pia mater; the last membrane strongly injected, as also the substance of the brain itself.

Such are a sample of the cases by which M. Broussais attempts, *practically*, to discriminate what he calls his physiological medicine. Whether his theories are true or false, we confess we take no very deep interest in discovering; indeed we suspect that, like many

others equally ingenious, "they will have their day," and are probably destined, in their turn, to give way to new and more attractive speculations. What we most admire in his doctrines is, that the practice to which they lead, though still lamentably defective, and characterized especially by a *theoretical* dread of purgatives, is at least an improvement on the reigning treatment of many diseases in France. The French, for example, believe that bleeding is only useful to moderate, not to introduce inflammation; they believe that, when carried beyond a certain pitch, it interrupts the regular course of the disease, and leads to hepatization; for example, in the lungs, and other equally bad consequences, M. Broussais designates them under the name of *expectants*. Whatever their theories may be, we shall give two cases from M. Lænnec's book, which we happen to have before us, one of the keenest opponents of Broussais, and otherwise a learned man and skilful physician, for the purpose of contrasting his practice with that of Broussais.

Pierre Bellot, aged 32, of a strong constitution, had occasionally for six months past shown symptoms of mental alienation, when on the 23d of December, 1817, in consequence of a debauch, he was attacked with violent headache, delirium, and agitation, for which he was admitted into the Hospital Necker on the 26th; at the visit M. Lænnec found him lying on his back, with his neck and body bent forward in consequence of permanent contraction of the muscles of the neck and belly. The biceps muscles were so strongly contracted that they maintained the forearms in a state of flexion, difficult to overcome. The face was red and expressive of profound stupor. The patient seemed deprived of sense and unable to speak. The conjunctives were injected; the right pupil a little more dilated than the left; the pulse hard and a little slow; the heat of the skin strong; he had constipation. He had also risus sardonicus very distinct. *Four leeches* were ordered to the temples. On the 29th, slight amelioration; on the 2d January, profound stupor, right pupil much dilated, left much contracted; in the evening he had rattle in the throat, spasms of the arms, a frequent feeble pulse, &c.: died next morning.

On opening the cranium much blood flowed out; the vessels of the pia mater were gorged; the circumvolutions of the brain much flattened and their substance very firm. The lateral ventricles contained four ounces of serum; the third and fourth were also dilated and filled with serum. The inferior anterior part of the left hemisphere and the totality of the pons varoli were softened, i. e. in a state of *ramollissment*. A pseudo-membrane covered the arachnoid, where it extends between the pons varoli and anterior lobes; the base of the brain also contained serum.

A woman, aged forty, middle stature, lymphatico-sanguineous temperament, was admitted into the Hospital Necker on the 19th December, 1817. She had occasional cough and difficult respiration for some time, but she had been confined to her chamber only five days before her admission. She sat rather than lay in her bed; her face was bloated; eyes dull and watering; lips livid; lower extremities infiltrated; respiration short, quick, and panting. The chest, when

pressed, gave a rather more flat sound than natural, and its walls were raised with force at each inspiration. The cough was frequent and followed by expectoration of yellow opaque sputa; the pulse small and frequent; the external jugulars swelled and pulsating, &c. *Four leeches* were ordered to be applied to the epigastrium, and pectoral drinks prescribed. She died on the 18th January. No very notable disease of the heart. A pint of serum found in the right cavity of the chest and some adhesion of the lung to the pleura cortalis, and near the summit of the lung a small cavity left by the softening and expectoration of tubercles. The right lung adhered strongly in its whole extent to the pleura costalis, &c.; both lungs were gorged with blood. No person can place more value on the pathological labours of M. Lænnec than we do; and we believe he has the character of being one of the most acute physicians at forming a diagnosis of the present day. In the treatment of the disease, however, his hand seems to be arrested by some theory, at least, as powerful in his mind, as that which inspires M. Broussais with all the ardour of a reformer. In the practice of both parties we are afraid the treatment is altogether subordinate to the theories which they maintain; M. Broussais excludes purgatives in a great measure from the list of his remedies, and he prefers local to general bloodletting, because he believes that a numerous class of diseases have inflammation of the stomach and intestines as a concomitant symptom and because he denies the existence of essential fevers. We have heard many Frenchmen praise our Lord Bacon; we should like to see his mode of investigating nature, applied a little more largely to the treatment of disease, than it at present is by the French physicians.

Of the second case of apoplexy, succeeding to jaundice, M. Broussais remarks, that he believes himself to be the first who has opposed the use of emetics, purgatives, bitters, soaps, &c., in this disease, and has pointed out a new and most successful mode of treatment, even in those cases without fever and with slowness of the pulse, namely, *sangsues* to the epigastrium, a new *panacea* in the hands of this revolutionary physician, which no disease is able to resist. Usually, he says, those patients treated by the former means, are troubled ever after with a chronic astritis, but the leeches being applied "les malades n'ont rien à redouter des suites de cette affection." We detest charlatanism in science, and do not mean to spare it. Again, with regard to the same case, which is communicated by one of his most skilful and devoted apostles, he remarks, that the physician who treated this soldier prescribed at a venture, without paying attention to the organic alterations, or the effects of his remedies; in so much so, that the young apostle, scarcely yet decorated with the doctor's cap, is put to the blush for him; but such scenes, he adds, are repeated every day in all the countries into which *notre doctrine a penetré*. We dislike heat, and above all personality in scientific matters, and we shall not fail to reprobate them whenever we encounter them.—

With regard to the third case, the enlargement of the heart, we are happy to be able to agree with M. Broussais's remarks, especially as they are altogether an echo of what we were accustomed to hear

from the mouth of Mr. Abernethy. The stomach, says he, is destined to transmit to all the nervous apparatus the stimulations which it receives from drinks and aliments; the heart receives its share of their impressions, and is supplied by branches of the same nerves which are transmitted to the stomach. Can we believe that a man for a series of years may with impunity execute the actions of his heart by the daily pampering of his stomach without the texture of that organ finally suffering? The contrary is the fact; for many enlargements and aneurisms of the organs are occasioned by a chronic gastritis; and we see every day palpitations and other symptoms disappear when the *gastro-enteritis* is cured.—*Broussais, Annales de la Medicine Physiologique.*

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Malacarne's Case of Laceration of the Pregnant Uterus.—The subject of this accident, aged 27, and mother of three children, was in the fourth month of pregnancy. On April 25, 1812, she had suffered much fatigue during very bad weather. On returning home she complained of pain in her left side, which was succeeded on the following morning by nausea, lasting some days, and by febrile symptoms. These continued until August 3, when she was seized by violent agitation of the whole body, tumour of the belly, and insupportable pain in the side. A physician called to her found her in a state of syncope; she recovered and did not complain of much pain, but became convulsed when the abdomen was touched. The face, which had been flushed, became pale; the eyes were sunk in the head; the pulse languid and intermittent; viscous sweats covered the body; syncope occurred alternately with convulsions, and only terminated with life.

On opening the body the omentum was found raised by much coagulated blood diffused among the intestines, and in the midst of it was discovered a fœtus, which, from its size, was judged to be about four months. The blood being removed, and the intestines turned aside, the uterus presented itself somewhat flattened, and with an irregular laceration, from which hung some folds of a flaky, fleshy, irregular substance, still pouring out blood. The laceration was on the convexity of the uterus, nearer to its longitudinal axis than the attachment of the Fallopian tube and ovarium, which could not be discovered. The writer supposes the laceration to have been the consequence of previous disease, and death to have ensued from the profuse hemorrhage thus occasioned.—*Mem. dell' J. R. Institut. del. Regn. Lombard.*

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On Rupture of the Umbilical Chord.—M. Chaussier, and others, having doubted the possibility of the rupture of the umbilical chord, by the mere weight of the child, M. et. P. Meirieu presents us with a case of Madame P. thirty-five years of age, in good health, and pregnant with her third child, who was struck by the pole of a coach on the left side of the abdomen, in the eighth month of her pregnancy. She, however, was not taken in labour until the conclusion of the ninth month, and was delivered of a female child. A few moments before this event, Madame P. was walking about her room, and was

seized with a strong pain; she took firm hold of the bed-post, brought herself nearer to the ground, retained the infant by means of her clothes, and placed it on the floor. The whole was the affair of an instant. One of the assistants took the child, and found the umbilical chord broken. This was before the arrival of Dr. Meirieu, who, on examination, found not the slightest traces of contusion on the child; it had, however, a spina bifida, occupying the lower part of the loins and the upper part of the sacrum. The umbilical chord was separated about four inches from the ring, and the end drawn out to a point.—*Journal Universel.*

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Cancer of the Lip.—In consequence of reading an account of M. Richerand's operation for lip cancer, Dr. Bull, of Cork, was induced to pursue a similar measure in the case of a female, 60 years of age, who had an ulcerated cancer of the under lip of two years standing. It extended from one angle of the mouth to the other, and in depth nearly to the reflection of the mucous membrane from the gums to the lip, presenting a fungous-looking ulcerated surface, much everted, so as nearly to reach the lower margin of the chin when the jaws were closed. Dr. Bull operated in the manner directed by M. Richerand, (Periscope for September 1822,) excepting that he used a scalpel instead of flat scissors. He commenced by an external incision through the integuments, and extending beneath the tumour from one angle of the mouth to the other, in the form of a long crescent. In the next incision, the whole of the diseased parts were removed at one stroke of the knife, cutting so low as the frenum of the lip. Lint was applied to the wound, when the arteries were secured; then a compress, and lastly a bandage. On removing the dressings on the third day, suppuration was found to be established; and, on the twelfth day, it was quite healed, not by granulation, "but by a process which, indeed, I did not expect, viz. eversion of the mucous membrane and approximation of it to the skin, with *considerable elevation* also, insomuch that there is hardly any appearance of cicatrization, and a new lip is actually formed, so that when the jaws are closed, the upper lip and the new surface approach each other so nearly, that the loss of parts appears quite inconsiderable." For the few first days the patient could not retain her saliva, "but she now possesses that power almost to its full extent."—*Medico-Chirurgical Review.*

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Extirpation of Cancerous Uterus.—Dr. Sauter has published a case of total extirpation of a carcinomatous uterus, where the patient lived four months after the operation.

In October, 1821, Dr. Sauter was consulted by a poor woman, of Constance, aged 50 years, who had borne six children, and who had been, for several months, distressed with a constant menorrhagia. Dr. Sauter found at the cervix uteri a painful excrescence, which bled on the least touch. He tried various remedies without success, and in January, 1822, he proposed the operation of extirpation, to which she readily consented. She was taken to the hospital, and the operation was performed on the 28th of the above month. It

was a horrible operation which lasted three quarters of an hour, and during which the bladder was penetrated, and the intestines brought in view! We will not detail the steps of this enterprise, for we do not think it will ever be imitated in this country. The poor woman bore the operation well, and did not lose above a pint and half of blood. The intestines being returned into the abdomen, and the vagina stuffed with charpee, the woman was put to bed, and did not suffer much pain during the first four days, but was troubled with vomitings, and the abdomen became swelled and tender. After this period the functions resumed their natural course, excepting that there was a discharge of urine from the bladder through the wound. On the 42d day the wound was entirely healed, and in three months and a half the woman left the hospital to rejoin her family. In seven days afterwards she returned to the hospital with cough, dropsy, and diarrhœa, of which she died, four months and some days after the operation. On examination, the bladder was found still open—the wound of the peritoneum, through which the intestines had descended, was quite whole, and no inflammation or adhesion in the abdomen or pelvis.—*Revue Medicale.*

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Epilepsy.—Baron Larrey has published an interesting and instructive memoir on epilepsy, in the July number of our respected Parisian cotemporary the Revue Medicale, into the didactic part of which we are unable to enter, but shall merely abridge from it the following cases.

Case 1. Louis L——, 22 years of age, a grenadier of the ex-guard, entered the hospital in 1806, having two tumours on the head, in which there was fluctuation, and slight redness of the skin. He was in a soporose condition at the time of his entry, and had been subject to frequent attacks of epilepsy. The tumours being laid open, a caries was observed penetrating both tables of the skull, through which a slight pulsation was perceptible. The sufferings of the patient were somewhat mitigated, and the epileptic paroxysms were less frequent and less violent; but the caries made progress, and a fungus of the dura mater protruded, any degree of pressure on which, would, at any time, reproduce epilepsy. The patient died about a month after his entrance into the hospital. On examination of the body, it was evident that he had had chancres; and Baron Larrey has no doubt of the disease being of a syphilitic character. He thinks, from experience of other cases, that the fatal catastrophe might have been prevented by a timely exhibition of anti-venereal remedies.*

Case 2. Barthelemi T——, 26 years of age, entered the hospital, for the treatment of two very large and scrofulous-looking tumours on the neck, accompanied by pains in the head, and paroxysms of epilepsy, to which last disease he had been subject, by all accounts, for some years. He stated, that in 1802 he had the venereal disease, and was treated methodically by a regular practitioner. Six

* A principal object of Baron Larrey, in this memoir, is to show that a considerable number of epileptic affections arise from syphilitic and other vices of the skull.

years afterwards he was wounded in the thigh by a musket ball in Spain, and experienced both the hospital fever and hospital gangrene. As the wound in the thigh cicatrized, he began to be affected with violent pains in the head, which were relieved by a discharge of purulent matter from the ear. This discharge ceasing, he became deaf—had ringings in the ear—vertigo, and slight epileptic attacks. In this state he was sent to the hospital of the guard, where he was leeched, blistered, and given internal medicines, by which means the abovementioned symptoms were dissipated. At this epoch an inflammatory swelling appeared in the arm-pit, which was (unfortunately, the Baron observes) discussed, instead of being brought to suppuration. From this time the epileptic paroxysms became extremely violent, and also frequent. The glands of the neck swelled, and some of them broke into abscesses. It was at this period that the patient came under the care of our author. Baron L. suspecting a syphilitic taint in the constitution, prescribed anti-venereal medicines, and applied caustic to the tumours. At the falling off of the eschars the patient experienced a tremendous attack of epilepsy, followed by hemiplegia of the *left* side, and an almost total abolition of his intellectual faculties. In a few days there was a renewal of the epileptic seizures, and the patient was in great danger. A large blister was ordered for the head. On shaving the scalp, a considerable prominence was perceived over the squamous portion of the right temporal bone, and another on the vertex. The blister produced some mitigation of the symptoms, and the patient was ordered diaphoretic drinks, with the use of the hydro-chloric acid, together with camphor and opium in large doses. The pains of the head were mitigated, and the paralysis sensibly diminished. A long perseverance in the acid, blisters, drains from the neck, and suitable regimen, brought about a complete recovery, the patient, however, experiencing many dreadful attacks of epilepsy during his progress towards a cure. The prominences on the skull entirely disappeared, and the patient was presented at one of the sittings of the Ecole de Medecine, with a cast of his head, such as it appeared on his first entry into hospital. Baron Larrey attributes the principal share of the cure to the internal use of the hydro-chloric acid.

Case 3. Francis P——, 24 years of age, entered the hospital on the 8th of October, 1821, for the cure of epilepsy, the paroxysms of which had become more and more frequent for some months past. Baron Larrey recognised, as the cause of this disease, a thickening (hypertrophy) of the cranium near the vertex, at which part there was a dull pain, especially on pressure. The other signs of cerebral apoplexy, in this case, were also striking, namely, debility of the moral faculties, languid countenance, drooping of the upper eyelids, inclination of the head forwards, stupid and taciturn manner. The epileptic attacks had been of long standing, eight or nine years, with intervals, however, of twelve or eighteen months. No blow, fall, wound, or other accident, could be traced as the cause of the disease, unless it was a retropulsion of scabies, which had been cured in three days by a shepherd of his native village. This epileptic being placed in one of the wards for wounded soldiers, was bled from the jugular

vein, and had cupping glasses applied to the temples and sides of the cervical vertebræ. The head was shaved and blistered. Nevertheless he had an attack in a few days. The hydro-chloric acid was now prescribed in a ptisan, with taraxacum, calomel, and aloes, camphor, &c. New blisters and cupping were employed, and an issue was established at the nape of the neck. In the beginning of November two œdematous spots were observed on the crown of the head, to which the caustic potash was applied. On the 16th of November a fresh attack of epilepsy was experienced, but of a very mild kind. In other respects, the condition of the patient, moral and physical, is much ameliorated. In fine, by persevering for a long time in keeping drains successively from various parts of the head, the soldier was completely cured of his afflicting malady.

Case 4. This is a curious case in more than one point of view, as will be seen in the sequel. Vallett Baptiste, 35 years of age, a soldier of robust constitution, was admitted into the hospital of Gros Caillou on the 28th of August, 1821, with complete hemiplegia of the right side, caused by a fall which he had a month before on the left side of the head. Headache first resulted from this fall, and to such an extent as compelled him to go into the fever ward, where the usual depletions and derivations relieved the cephalalgia. Hemiplegia next succeeded, and for this he came into the surgical wards under our author. The right eye became affected, the tongue was paralyzed, and the intellectual faculties were impaired.

After an attentive examination of Vallet's head, an unnatural protuberance was observed all over the left and superior portion of the cranium, and hence it was readily concluded by our author, that the phenomena presented by the patient resulted from the injury done to the cranium, meninges, and probably the brain itself, by the fall. It was therefore determined to attack the disease at its source. The vessels of the head were depleted by local bleedings—the scalp was shaved, and a blister applied all over the left side. In four days some relief was obtained even by these means. But successive blisters, issues, moxas, and various counter-irritants were perseveringly employed, besides a whole polypharmacy of internal remedies. The consequence was that, after one or two slight relapses, Vallet was discharged from the hospital towards the end of December, "*parfaitement gueri.*" Our author learnt, however, that this man had soon returned to the fever division of the hospital for febrile cephalalgia, and general bad health, where he died on the 7th February, 1822, seven months from his first coming under Baron Larrey's care for hemiplegia. The Baron had an opportunity of examining his body, and the following appearances presented themselves. The cranium sawed circularly, and carefully raised, showed the left side of this dome much less capacious than the right. The surface of the dura mater, slightly injected, and of a yellowish tint, presented traces of chronic inflammation. The arachnoid was sound. The pia mater was highly injected, and manifestly in a state of inflammation. On raising the brain from the basis cranii, it was observed that the right optic nerve was larger, denser, and redder than the left—that a steatomatous tubercle, in a state of inflammation, encir-

cled the basilary artery opposite the pons varolii, rendering the calibre of the artery at this place narrower than natural. The whole medullary substance of the cerebrum of the left hemisphere, was gorged with blood, and of a firmer consistence than that of the right, which, on the contrary, was nearly of a natural colour and consistence. The left side of the tuber annulare was also denser than the right. On examining the basis cranii they were all struck with the great difference between the two middle fossæ. The right was one half larger than the left.* In respect to the posterior fossæ, on which the lobes of the cerebellum rest, their shallowness excited the astonishment of all present. And this circumstance led our author to examine whether there was any correspondence between the genital organs and cerebellum. The lobes of this last did not appear to be more than one half the usual size of those in people of similar stature with Vallet. The testicles were not larger than a small bean each—and the penis did not admeasure more than six lines in length. This is a very strong fact for the phrenologists—and with this we shall close the present paper.—*Revue Medicale.*

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Transposition of the Viscera.—"I know not," says M. Scoutetten, "whether I have been favoured by chance, or whether visceral transpositions are more frequent than we generally imagine; but it is remarkable, that I have met with three examples of the kind in less than a single year." All the subjects were young soldiers, who had passed their twentieth year, were of a good constitution, and enjoyed excellent health, till they were cut off suddenly by gastro-enteritic inflammation. In one of them, the transposition of the chief viscera had been detected during life. The anatomical details present nothing remarkable, except the extreme precision with which the viscera of the opposite sides occupied the places of one another. The arteria innominata supplied the left arm and left side of the neck; yet one of the men was well known to be right-handed. In all of them, "the vertebral column turned the concavity of its lateral curvature to the right instead of the left side;" a fact, which Scoutetten thinks will contradict the notion of Bichat, that the ordinary curvature of the spine to the left side depends not on the situation of the aorta, but on the habit of using most frequently the right hand. —*Journ. Univers.*

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Fatal Hemorrhage from Rupture of the Fallopian Tube.—A woman, who lived on bad terms with her husband, one evening, during a violent quarrel, threw a chair at him with all her force. Early next morning, she was seized with violent cholic and frightful vomiting and purging. These symptoms were followed by swelling of the belly; and she expired in the midst of horrible convulsions, after thirteen hours illness. Not long afterwards, a suspicion arose of her having been poisoned; the body was disinterred ten days after death, and carefully examined by order of the proper functionaries. It was quite fresh, without lividity, or contusions. All the organs in the

* Baron Larrey sent this skull to his friend Soemmering.

chest and head were healthy, and so was the whole tract of the alimentary canal; but the belly was distended with serous fluid and enormous clots of blood, amounting to more than eight pounds. After a deliberate and careful search, the dissector at last found, that the hemorrhage had proceeded from an oblong, irregular, fringed perforation, an inch in circumference, situate on the right Fallopian tube, near its attachment to the uterus. He does not appear to have searched for the torn vessel or vessels which had yielded this enormous quantity of blood. As the woman was nursing at the time of the accident, it is very likely that the tube ruptured was the one through which the last ovum had descended, since it preserves its tenderness and great vascularity for some time after delivery.—*Ibid.*

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Spontaneous Perforation of the Stomach and Œsophagus. (*Journ. Universel, Mai,* 1823.)—This Journal contains an account of two good examples of this most inexplicable phenomenon. In one case, death arose apparently from subacute pneumonia, and corresponding appearances were found in the lungs; but the stomach was also perforated at its lesser curvature, and extensively eroded near the pylorus. In the other, the only symptoms observed during life, corresponded with the perforation of the œsophagus found after death, viz. pain at the root of the neck, difficult deglutition, and laborious breathing. The whole fore and back surfaces of the lower third of the œsophagus were destroyed, so that nothing remained but two lateral chords; and the stomach was entirely divested of its villous coat, and pierced at the middle with two holes, one as large as a half-crown piece. It is evident, that the former of these cases accords best with John Hunter's views of the nature of such perforations, while the latter rather corroborates the opinion of Professor Chaussier, who regards them as the consequence of a peculiar disease. The author of the cases, in a short but most pernicious commentary, ascribes them to the prolonged use of gin and corrosive sublimate!!

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Spontaneous Combustion.—Though this singular incident has ceased to be a novelty, yet the following case is so striking, chiefly on account of the evidence establishing it, that a short notice of it may not be unacceptable. In almost every circumstance it agrees perfectly with those which have been related by former observers. The particulars were collected under legal authority by MM. Colson and Lelarge, practitioners at Beauvais, where it happened. The subject was a very tall fat brewer, long addicted to excessive drinking. At twelve on the evening before the accident, a woman of the house ascertained that he was in bed, and his candle extinguished. Next morning at eight, a thick smoke being seen to issue from his apartment, the door was burst open, and his body found stretched on the brick floor and still burning. The flame was extinguished with difficulty by the copious affusion of water. Close beside the body stood an iron pot containing a little half-consumed charcoal, and near it a straw-bottomed chair lay upset, with its bottom burnt away. Except the body and the chair, nothing else in the room was injured. The flesh of the neck was destroyed, except on the anterior part. The

whole left arm and the thoracic parietes of the same side were entirely consumed; and of the right side and arm, nothing could be seen but some charred fragments of ribs, and the shoulder, the humerus, and part of the fore-arm. Both thighs and the right leg were likewise almost entirely consumed; and of the viscera of the trunk, the only remnants were the heart, lungs and liver, which, however, were all more or less torrefied. This account affords no satisfactory evidence of the spontaneous inflammation of the body; but it clearly establishes the fact, that it may acquire a preternatural combustibility.—*Journal Compl. du Dictionnaire, &c.*

Another case, which occurred in the neighbourhood of Bordeaux in September, 1822, has been related in the last volume of the Nouveau Journal de Médecine; but though the particulars were sworn to before a magistrate, our readers will not be at a loss to discover good reasons for doubting its authenticity. A sober healthy blacksmith was returning home in company with a girl one very hot afternoon, when he suddenly felt an acute pain in the right index, and was astonished to behold it burning and smoking. He rubbed it against his thumb to extinguish the flame, but the flames caught both the thumb and middle finger. He then rubbed them on his trowsers, but burnt two holes in them; next he thrust his hand into his pocket, and set it on fire too; and finally, he happened to touch the fore and middle fingers of the left hand, when these caught fire also. In vain did he plunge them into a bucket of water; they continued to burn. In vain did he stick them in the mud; the virtues of the mud were not more potent. At last, a devout female reminding him that the faith saves us, he dipped them in holy water, and the flames were speedily extinguished. Since the well known story of the priest Bertholi (see Foderé Méd. Lég. III. 210.), this is the only instance of alleged spontaneous combustion where the sufferer has been seen during life. The most amusing part of the whole story is, that the relator doubts none of the circumstances except the efficacy imparted to the water by its sanctification.

On Partial Dropsy.—M. Bouillaud, in a memoir on obliteration of the veins, has endeavoured to show that this accident is the sole cause of partial dropsy of the passive kind. He fortifies this opinion by first relating three cases of dropsy of both limbs arising from obstruction of the vena cava or both iliac veins. In two of these cases, the obliterating matter consisted of fibrinous coagula, conjoined in one with a cancerous tumour of the rectum, uterus, and adjoining parts, in the other, with fungoid enlargement of the ovaries. In the third case, the matter filling the veins resembled the medulla of the brain, and was connected with fungoid enlargement of the right kidney. He next details four cases of dropsy in one limb arising from obliteration of its crural or iliac vein, by the deposition of a solid, reddish, fibrinous, friable matter. And finally, he describes two cases of pure ascites, uncombined with anasarca, in both of which the vena portæ was choked up with a fibrinous clot, and compressed by a tubercular swelling of the liver. M. Bouillaud adds, that the obliteration is generally the consequence of simple pressure, though,

in three of his cases, he suspects it to have been caused by inflammation. From these data he ventures to infer, that general dropsy of the passive kind likewise arises from obstruction to the course of the blood through the veins, and not from general debility, as is commonly thought; and, in support of this assertion, he alleges, that it is observed only in the advanced stage of diseases of the heart, thoracic vessels or lungs, when the venous circulation is embarrassed. We believe he is quite correct in attributing partial passive dropsy to the cause assigned; but the propriety of extending the explanation to general dropsy may be questioned.* M. Bouillaud has been eminently fortunate in witnessing a number of most valuable and apposite cases; and to these he has annexed a short notice of some others to be found in books. His paper, however, is to be considered rather as expressing the general opinion and experience of the profession, than as advancing any new doctrine, or grand fact in pathology; for the connexion of passive partial dropsy with obstruction of the veins is, we apprehend, familiar to all British practitioners at least.—*Archives Gén. de Méd.*

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Functions of the Spinal Chord.—Not long ago, as our readers are aware, M. Magendie found by experiment, that the anterior bundles of the spinal nerves are destined for motion, and the posterior bundles for sensation. Pursuing his inquiries farther, he appears to have established the same facts with regard to the anterior and posterior portions of the spinal chord itself. If it is touched or pricked on the anterior surface, the animal expresses acute pain; but not when the anterior surface or middle part is touched or even torn. A very remarkable case presented to him by M. Royer-Collard, is well illustrated by these facts. A man, who had long been affected with paraplegia, and for seven years had been unable to move a joint of his lower extremities, nevertheless retained their sensibility unimpaired. After death, besides other less important derangements of structure, the corpora pyramidalia and olivaria were found reduced to the consistence of pap; and the softening extended, though with progressive diminution, along the whole anterior surface of the medulla, and throughout the whole thickness of its anterior chords; but the posterior surface was every where perfectly healthy.

The invention of M. Magendie, and the other spinal pathologists of the French capital, have been in vain put to the rack, to account for a very singular case which has lately occurred there to an accurate observer, M. Rullier. It is detailed in the Journal of Physiology with great minuteness and apparent fidelity. We cannot spare room for a sufficient abstract of it, but shall merely give its most striking features, as contained in the reflections which Magendie has appended to the author's description. "A man, who enjoyed almost to the last hour the free use of his limbs, the sensibility of his arms, an acute understanding, and active generating faculties, had nevertheless experienced, probably for a long time, the loss of a full third part

* We may refer M. Bouillaud, or those who think as he does, to a curious paper by M. Gaspard in the 1st volume of Magendie's Journal, on an Epidemic Anasarca, which ravaged several departments of France after the bad crop of 1816. It was evidently *passive*, and clearly depended on general debility.

of the nervous tissue of the spine; the communication between the cervical and dorsal portions of the column was kept up, so to speak, by the membranes only; for nothing remained of the chord but a thin plate of white substance hardly two lines broad, and probably altered in its structure, while the vacuity from which the medullary matter had disappeared was filled with serosity. The upper and lower parts of the chord therefore were almost completely separated from each other by an interval of six or seven inches; yet the will governed the motions of the limbs, and the imagination stimulated the genital organs." The conjectures offered by way of explanation are of course very far from being satisfactory, even in the eye of the Professor himself.—*Journ. de Physiologie.*

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On the Formation of the Ovum in the Mammalia.—Dr. Plagge of Bentheim has been lately investigating this obscure and difficult subject, by careful observation of the ovaries in the larger mammalia. He completely agrees with the doctrine of Sir E. Home and Mr. Bauer (Phil. Trans. 1818), as to the formation of the ovum in the ovary before impregnation; but he thinks he has discovered, that, instead of being formed in the corpus luteum, as these gentlemen affirm, the ovum, as well as the corpus luteum, is produced in the vesicles of Graaf; and that the corpus luteum bears the same relation to the ovum in the ovary, as the placenta does afterwards in the uterus. He observed, that a little areola first appears on the membrane of the vesicle; and not long afterwards, the rudiment of the future ovum may be seen like a grey speck on the middle of this areola, and the inside of the vesicle. After the rudiment has increased till its diameter is equal to three lines (in the cow), the corpus luteum begins to appear on the peduncle of the rudiment, betwixt it and the membrane of the vesicle, and the ovum is thus gradually pushed towards the surface of the ovary, to be impregnated.—*Journ. Complémentaire, &c.*

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Proximate Principles of the Blood.—MM. Prévost and Dumas of Geneva, allege that they have found the blood to consist of serum, holding in suspension regular insoluble corpuscles, which are composed of a central colourless spheroid, and a sort of membranous sac, of a red colour, surrounding it. And they consider the coagulation of the blood to arise from "the attraction of the red matter round the white globules ceasing with the motion of the fluid, so that the white globules can obey the force, which tends always to unite them." The white globules are of course fibrine; and the red matter seems to them to be a kind of translucent jelly, insoluble in water, easily divided, but not capable of reunion. They have examined the proportion which the white corpuscles and red matter together bear to the rest of the blood, in a great variety of animals; and they find them most abundant in birds, next in the mammalia, especially the carnivorous mammalia; and they are least plentiful in the cold-blooded animals. In man they constitute about 129 parts by weight, per thousand. They are more abundant in arterial than in venous blood: one thousand parts of the arterial blood of the sheep, dog, and

cat, contain 10 parts more of these particles than blood taken from the veins. The serum is identical in both. Their observations are many of them very interesting: the account they give of the coagulation of the blood, is evidently nothing but words.—*Ann. de Chim. et de Phys.*

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Effects of the Extirpation of the Kidneys. Discovery of Urea in the Blood.—The same gentlemen, while endeavouring to ascertain the precise nature of the functions of the kidneys, were led to observe the following singular effects, after these organs were extirpated. One kidney may be removed from dogs, cats, and rabbits (which were the only animals operated on), with little immediate, and no ultimate inconvenience. Even the extirpation of the other produces at first but little injury; the wound even heals; but in three days the animal is seized with profuse vomiting and purging of a brown liquid matter; the pulse rises to 200, the breathing becomes rapid, the heat fluctuates to the 9th degree of Fahrenheit above and below the natural standard; and death just takes place betwixt the 5th and 9th day. The inspection of the body shows the effusion of serum pretty abundantly into the ventricles of the brain, slight condensation of the lungs and mucus in the bronchi, more or less inflammation of the liver and distention of the gall-bladder, and great contraction of the bladder of urine. These phenomena have been formerly noticed in part by Haller and Richerand; but have never before been so accurately determined. Not long after the extirpation of both kidneys, urea may be discovered in the blood, as appears from the following analysis. The blood was more serous than natural. Its serum and crassamentum being dried and boiled in water, the solution was evaporated, and the solid matter subjected to the action of alcohol. The residue, after the evaporation of the alcohol, weighed twice as much as that procured from the healthy blood of the same species of animal; *and concreted into a white crystalline mass when acted on by nitric acid.* This, when purified by a simple process, furnished scales of a pure pearly-white colour, being the nitrate of urea. From this important fact, viz. that urea exists in the blood, when the kidneys have been removed, MM. Prévost and Dumas have inferred, that "the kidney is nothing more than an *eliminating* surface like the skin, and that we are still ignorant where the urea and other principles of the urine are formed." Their experiments have been confirmed by Segalas and Vauquelin.—*Ibid.*

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On the Reunion of Wounds after great Operations.—M. Lisfranc, in a very elaborate memoir on a new mode of performing amputation at the hip-joint, has observed, that to prevent consecutive hemorrhage after this and other great operations, M. Dupuytren proposes to delay the dressing of the wound for two or three hours. Lisfranc himself has found, by many experiments on animals, and some trials on man, that, when the wound is left exposed till the oozing of blood has ceased, and is then carefully wiped, immediate adhesion is much more frequent than after the usual mode of management. Hemorrhage, he adds, is always most hazardous after the wound has been

dressed; time is lost in removing the dressings; they often adhere firmly to the wound, so as to cause more pain by their removal than the operation itself; and the clots deposited in the cavity of the wound, though M. Serres has found them sometimes organized, may nevertheless play occasionally the part of foreign bodies, hindering adhesion, and exciting dangerous inflammation. The practice here recommended has been for some time employed by several London Surgeons, and has also, we believe, been tried in this city. It is very favourably spoken of by all who have had recourse to it. A delay, however, of half an hour, or three quarters of an hour, has generally appeared quite sufficient for the oozing of blood to cease.—*Archives Gén. de Méd.*

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On the Preservation and Breeding of Leeches.—An interesting memoir on this subject has been lately read by M. Noble, physician at Versailles, before the Agricultural Society of the Seine and Oise; and it appears from his experiments, that these useful animals may be effectually preserved and even bred in troughs, with the aid of a little care, and a few simple contrivances. M. Noble observes, that the great mortality among them, when crowded together in small vessels, is owing to the stronger destroying the weaker for the sake of nourishment. He therefore constructed a reservoir seven feet long, three feet wide, as many deep, with sloping sides lined with clay, supplied it with a constant stream of water, exposed it to the sun, sheltered it from the north, surrounded it with a ledge of turf, and planted rushes in one of the angles. In November, 1820, he placed 2000 grey and green leeches in this trough, where they passed the winter, buried in the mud, without sustaining any loss whatever. Towards the end of spring, several young leeches were seen sticking to the old ones, and swimming round them occasionally, as if to try their strength. In August, he observed several smooth, conical holes in the mud, each of which contained a little oval cocoon, as big as that of the silk worm, and porous outwardly like a sponge. Some of these were perforated at each end, and empty; others were filled with a transparent jelly; and the rest contained from nine to fourteen young leeches, which in a few days pierced their envelop, and swam vigorously about. M. Noble has not yet witnessed the formation of the cocoons; for as soon as the leech enters the conical holes, the water becomes muddy, and conceals their operations.

At the reading of the memoir from which the foregoing extract is abridged, a member, M. Plancy, observed, that the formation of cocoons by the leech has been long known to the people in the department of Finistère; and that it is through means of them that the dealers who supply the capital are in the custom of stocking their ponds. The workmen dig them up from the bottom of the little muddy pools, and place them in small ponds prepared for the purpose. Six months afterwards the young are removed into larger ponds, on the edges of which cows and horses are brought to feed, for the purpose of nourishing them and hastening their growth; experience having taught the country-people, that the leech is never prolific, except after having sucked the blood of animals.—*Journ. Univers.*